J. Leon Williams

Dr. J. Leon Williams.

It is with great pleasure that we are enabled to publish a portrait of Dr. J. Leon Williams, one of the most eminent dentists in our profession, who by his recent published works in solution of the great problem of the cause of dental caries, has earned for himself a distinction which places him among foremost minute anatomists and histologists of the world.

The likeness herewith presented is a reproduction of the painting by Prof. Hubert Herkomer. The painting was exhibited in the Royal Academy, London, last year, and attracted a great deal of favorable notice from the critics, who unanimously pronounced it to be the best effort of that celebrated artist.

Dr. Williams was born in Somerset County, Maine, in 1852. He was educated in the public schools, and at Oak Grove Seminary. His dental preceptor was Dr. E. J. Roberts, of Augusta, Maine, of whom he has the kindliest remembrances. The doctor relates that once, while watching his preceptor operate, Dr. Roberts said to him: "In years to come, when perhaps you will be much better known than I am, you may say that you saw some things in dentistry well done while standing beside my chair." This statement Dr. Williams not only most heartily endorses, but he adds that, having witnessed operations by the most skillful men in all climes, he ranks his old preceptor among the best of them all.

Dr. Williams began the practise of his profession in 1871. As soon as he could save one hundred dollars, he invested in a microscope and shortly afterwards began the publication of the results of his researches. On one occasion he was invited to read a paper before the Connecticut Valley Dental Society, at Providence, R. I., his subject being "The Development of the Teeth." The late Prof. Garrettson was announced to read a paper also, his subject, however, not being stated on the programme. To the great astonishment of Dr. Williams, when Prof. Gar-

rettson arose, he announced that he would lecture on "The Development of the Teeth," and then proceeded to make a severe critical attack upon all the views which Dr. Williams had published. He ridiculed the idea that such problems could be settled with the microscope, and declared that he could evolve a philosophical theory, which would be of greater value than all possible results of microscopic investigation.

It may be imagined that Dr. Williams, then a young man, was considerably abashed, and that he felt some hesitation about following Dr. Garrettson's afternoon lecture, with his own paper announced for that evening. Dr. Fillebrown, however, sought out Dr. Williams, and offered him encouragement, advising him to proceed boldly, and to make a vigorous reply in defense of his own opinions, which had been made the subject of attack. This Dr. Williams did, and in practical endorsement of his position and opinions, after the discussion of the subject, he was unanimously elected to honorary membership in the society.

One direct result of this incident was the establishment of a chair of histology in the Philadelphia Dental College, almost immediately afterward, presided over by Prof. Garrettson himself.

In 1886 Dr. Williams read a paper on Dental Histology before the First District Dental Society, Drs. Heitzman, Bodecker and Abbott opposing him in the discussion which ensued. The subsequent controversy between Dr. Williams and this coterie has been a conspicuous feature of our dental literature since that date.

In February of this year, before the Odontological Society of New York City, Dr. Williams read the most classical paper on Dental Histology which has ever been presented before any scientific body. He expounded his views, and proved them in the most final manner, through the aid of that method of investigation which Prof. Garrettson had derided. The causes of dental caries are now positively known, through Dr. Williams and his microscope, in no small degree aided by his wonderful mastery of photographic methods.

The Heitzman school has had its day. Dr. Heitzman, its enthusiastic founder, is dead. Dr. Atkinson, one of his most ardent followers, has passed away. Prof. Abbott, another prominent disciple, lived to hear Dr. Williams's refutation of the living reticulum theory of the formation of enamel, but he has died without making response. Dr. Bodecker, the sole survivor of the Heitzman school, is still alive, but silent. The Williams theory, therefore, is undisputed, and holds sway.

Though dwelling in England, we must be proud that Dr. Williams is an American, and that when he has a scientific fact of value to communicate, he crosses the great Ocean to impart his knowledge to an

American audience, and to chronicle his discoveries in the dental literature of America.

The eminence which has been gained by Dr. Williams is not the result of accident or chance, or what lethargic men call "luck." It is but the logical result of a life devoted to an object; dogged persistence in the face of seemingly overwhelming obstacles; and above all, a love of truth which has led him to search for the truth, rather than for seeming facts in conformity with some preconceived theory. Such a life-work should be an everlasting encouragement to the younger man, when temporary obstacles beset his path, strewing it with discouraging difficulties. Success is possible to all. It is but the logical reward of honest endeavor and unyielding perseverance.

An Improved Method of Attaching Teeth to Gold Plates.

By C. Frank Bliven, D.D.S., Worcester, Mass.

It frequently occurs in gold work, that the artificial teeth when set to proper occlusion, meet too great a strain to be borne by the slender pins which are all the resistance offered to the forces of mastication, and it is this fact which explains the fracturing of many teeth where the bite is close, or the patient uses great force in closing his mouth. The following is a useful method which may be frequently utilized, and which relieves the strain which would ordinarily be upon the pins:

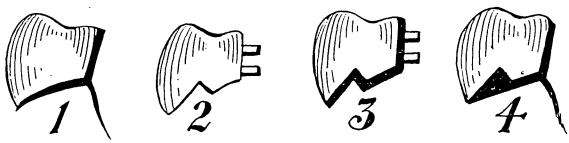


Figure 1 is a diagrammatic sectional view of the tooth backed in the ordinary manner and soldered to the plate. It is evident that in mastication, all the strain must be upon the pins. To avoid this, before backing the tooth, but after grinding it to place on the cast, cut a deep notch as seen in Figure 2. Line the tooth with pure gold plate, burnishing it fairly into the notch as shown in Figure 3. Fit over this a strong backing, bending the pins to hold it in place, and then unite to the plate in the usual manner. Figure 4 shows a sectional view of the result, and it is seen at once that where the notch was cut, there is now a strong shoulder of gold which will serve to lessen the strain upon the pins.

This method can be used in any case where it is not necessary to have the porcelain itself rest upon the gums.

Non-Cohesive Gold, Its Merits and Manipulation.

By D. J. McMillen, M.D., D.D.S.
Dean, Western Dental College of Kansas City, Mo.
Illustrated by M. J. Brady, D. D.S.

Part III.

Financial Advantages of Non-Cohesive Gold.

It is a fact that many of the amalgam fillings inserted in bicuspids and molars are not inserted because of the inability or unwillingness of the patient to pay for better operations, so much as because of the trouble, to the ordinary dentist, of adjusting the rubber dam, and the difficulty of using cohesive gold, in such places where it is hard to see, and still harder to keep the cavity dry for the length of time usually needed to insert an all-cohesive filling. The length of time and difficult work required are quite an item to the aver-

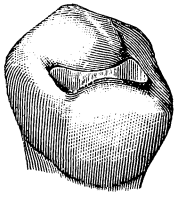


Fig. 27.

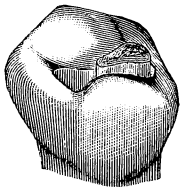


Fig. 28.

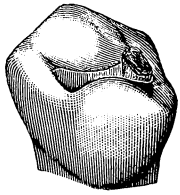


Fig. 29.

age dentist, but added to this is the protest of the patient who suffers from the discomforts of having the mouth held open, and the overflow of saliva and oftentimes the pain of improperly adjusted clamps and ligatures.

It is for these reasons rather than because of the expense, that, too often, both dentist and patient compromise upon amalgam, where something better should be used, and however much we may deplore these things, this is nevertheless the plain truth.

A more extended knowledge of the merits and use of non-cohesive gold would operate to the advantage of all concerned in such cases, because the patient could be spared much discomfort and the dentist much trying work, with much time saved to both, and yet gold be inserted in a majority of molars and bicuspids.

The patient would have his teeth much better filled, and the dentist his pocket, for he would not only receive a much better fee than for amalgam work, but be able in the same time, to insert many more fillings than with cohesive foil. Their moderate cost and less discomfort to the patient, lead to their more extensive use, and the dentist may materially

increase his income without having his patients feel that they are paying more than they can afford.

This business aspect of the use of non-cohesive gold, should not be overlooked, for if a dentist can benefit his patients, lighten his own labors and increase his income all at the same time, he should not fail to investigate.

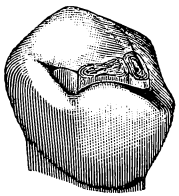


Fig 30.

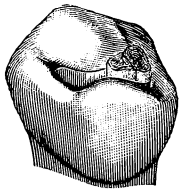


Fig. 31.

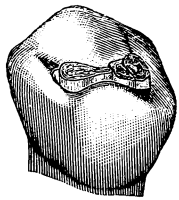


Fig. 32.

Method of Filling Cavities in Bicuspids.

The details of filling some common cavities now follow.

Fig. 27 represents a typical cavity in the fissure of a bicuspid. The cavity is enlarged at each end of the fissure, more or less as the case requires, but in any event will nearly always be larger at the ends than in the middle.

Fig. 28 represents the first cylinder of gold inserted. This cylinder is as large as can well be put in place, and is flattened laterally by the pliers, that it may more readily enter the cavity. It must be large enough so that it will completely fill the cavity from side to side when driven back by the foot plugger as in Fig. 29.

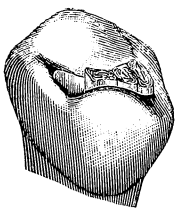


Fig. 33

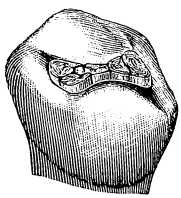


Fig. 34.

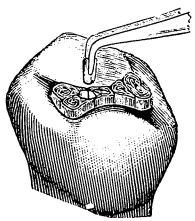


Fig. 35.

As before stated, the cylinders should be of such length as to project out of the cavity a distance equal to one-fifth the depth of the cavity. This point is very essential to observe, for too short cylinders will condense down below the margins of the cavity on the final condensing, and too long ones will interfere with filling.

Fig. 30 shows the second cylinder inserted. It will be seen that this cylinder is very much flattened laterally. It should be large enough to fill perfectly from side to side when condensed down against the first cyl-

inder—Fig. 31—yet not so large that the foot plugger will partly condense it and wedge it fast in the narrow part of the cavity before it is thoroughly driven back against number one. This point must be carefully observed, as many failures come from getting the cylinders wedged fast in the narrow part without full condensation against previous cylinders.

Figs. 32 and 33 show the third cylinder introduced and condensed back. This cylinder should not be too large, or it will wedge fast in the

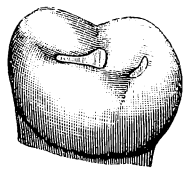


Fig. 36.

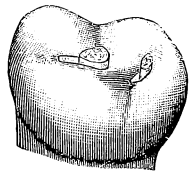


Fig. 37.

entrance to the narrow part of the cavity, before it is driven completely against its predecessor. Of course more cylinders may be used than shown in the illustrations, but would be handled in the same way, using ones large enough to fill the space, yet not so large that they wedge fast where not wanted.

The last portion of the cavity is now filled with two cylinders, placed as in Fig. 34. After placing in position, the wedge instrument is inserted between these last cylinders and those previously condensed back, and a tightly rolled wedge cylinder is inserted as in Fig. 35. The location of this wedge cylinder is of importance. The wedge instrument must not be inserted along the margin of the cavity at any time, but always in the

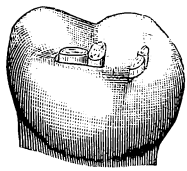


Fig. 38.

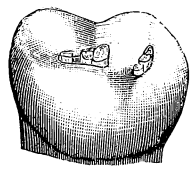


Fig. 39.

body of the filling, so as to force the cylinders outward from the center and against the walls, as would not be the case if inserted along the margin of the filling.

The wedge instrument should not be inserted in the narrow part of the fissure in the cavity just shown, or the pressure may split the tooth; or if not that, the margins of the cavity might be chipped by the force exerted, and besides, the actual spreading of cylinders, accomplished by insertion of the wedge in the narrow part, would be very little.

The lateral condensation of cylinders should be accomplished as much as possible by foot pluggers, condensing each cylinder by mallet force as put in position, and not leaving it to be condensed at the last by the insertion of wedges.

The final condensing and finishing of the filling is as previously described, the burnisher being used much more freely than upon cohesive gold, and alternating its use with the corundum point. Pumice stone upon a leather buff wheel does not give as satisfactory results as with cohesive gold.

Treatment of Fissure Cavities in Upper Molars.

Fig. 36 represents an upper molar in which two very common cavities are shown. These cavities are prepared as described for non-cohesive gold, differing in this case from the usual preparation, by being somewhat deeper and much less undercut, for these cavities—the lingual fissure cavity in particular—are usually rather shallow and the undercut commonly made is quite considerable. These are cavities frequently attempted in non-cohesive work, and where failure occurs in this case, the most frequent cause is improper preparation of the cavities.

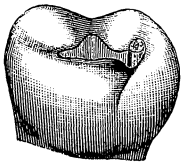


Fig. 40.

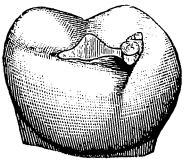
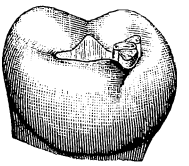


Fig. 41.



Ffg. 42

With a proper preparation of these cavities, the subsequent work is not difficult. Fig. 37 shows the first cylinder inserted in each cavity. In the central fissure, the cylinder is as large as can well be introduced. In the lingual fissure, the cylinder must be much flattened, and not so large that it will not enter into the farthest extension of the cavity on condensing with the foot plugger.

Fig. 38 shows the first cylinder in each cavity condensed back with the foot plugger, and also the second cylinder inserted ready to condense back. Fig. 39 shows the second cylinders driven back to place, and also the anterior corners of the cavity filled by cylinders drawn forward by the foot plugger.

The remaining space is filled in by as large a cylinder as is possible to introduce, after which it is ready for "wedging" in place. In doing this it must be remembered that the first two cylinders were condensed by mallet force and therefore could be packed in quite solid, and need

but little more condensation, while the third only received the condensation possible by drawing it forward with the foot plugger by hand pressure, and the last only the condensation of squeezing together by the pliers.

The wedge instrument should therefore be inserted between the third and fourth cylinders, as they need lateral condensation most. The filling may also be wedged between the second and fourth if needed.

In each case—and in the lingual fissure particularly—the wedge instrument should be worked from side to side in the direction of the greatest length of the filling, and not in all directions, as in a larger filling, on account of the danger of splitting the tooth or injuring the enamel margins. When the needed wedge cylinders are all in place, the fillings are condensed and burnished as before described.

Compound Fissure Cavities in Upper Molars.

Fig. 40 shows the first cylinder inserted in a common cavity in an upper molar, one in which the central and lingual fissures are joined together by a more or less narrow opening.

It will usually be found necessary to fill the extensions of the lingual fissure first, by cylinders not too large to pack well

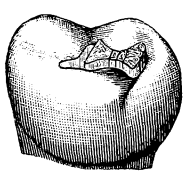


Fig. 43.

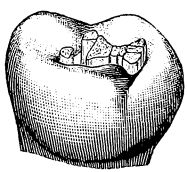


Fig. 44.

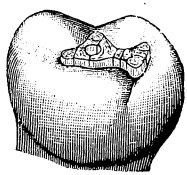


Fig. 45.

into them, one of which is shown condensed into place in Fig. 41, and the other in place ready to condense. Fig. 42 shows each extension of the lingual fissure filled, and a good-sized cylinder ready to condense in between them, which tends to further force them into the extensions, and thoroughly fill this part of the cavity.

This third cylinder when condensed is followed by two others, so small that they will not wedge fast in the narrow part of the cavity, before becoming condensed thoroughly against those already inserted, and as described in connection with Figs. 30, 31, 32 and 33.

Fig. 43 shows a very large cylinder introduced and condensed in the main part of the cavity after the narrow connecting part has been filled as described.

The remaining space is filled in the following manner. Fig. 44 shows the buccal extension and the anterior extension each filled with a suitable cylinder condensed as tightly as possible into place. After this,

two other cylinders are introduced with as much condensation as possible, filling the whole cavity.

The wedge instrument is introduced between the last inserted cylinders, as shown in Fig. 45, and the usual wedge cylinder forced into place. More than one wedge cylinder may be introduced if needed, also one in between the third and fourth cylinders, if this does not seem sufficiently spread laterally.

In any filling, wedge cylinders may be introduced as long as the wedge instrument can be forced down with moderate pressure, but overwedging must always be avoided. A wedge cylinder that is so tight that it cannot be inserted entirely to the bottom of the cavity, is always a source of danger and ultimate failure.

It is better to wedge only moderately, and depend on the lateral spreading of the gold on the final malleting down, rather than to try to accomplish too much lateral spreading of cylinders by wedging.

Yet the wedging should not be slighted. Unless carefully done, failure results and all the labor is lost, to say nothing of reputation, confidence and patients. According to tradition, much was once lost for want of a horseshoe nail, and the final wedge of a non-cohesive gold filling may be the horseshoe nail on which a long train of either successes or failures depends.

(To be continued.)

Acid Canning.

By Dr. F. S. Brooks, Martinez, Cal.

About seven months ago, I commenced experimenting with a combination of chromic and sulphuric acids in the mummification of pulps, where portions remain in inaccessible root canals, and although the time may be too short yet to say what the permanent results will be, I have demonstrated one thing at least, and that is, that as a mummifying agent, this combination is unequaled.

My first experiments were upon pieces of raw beef; I took some pieces of meat one-half inch or more in thickness, and placed on them a few crystals of chromic acid, then a drop or two of dilute sulphuric acid (fifty per cent.) and left them over night. The next morning they were found to be perfectly tanned, being very hard and tough, of a yellowish color, and impervious to water; after several hours' immersion, they were found to be perfectly dry.

A similar method is employed in some tanneries I understand, where rapidity is the desideratum.

Experimental Mummification of Dead Pulp.

The next experiment was upon the pulp of a lower sixth year molar, the root portions of which I found it impossible to devitalize or remove. A few crystals of chromic acid were placed in the pulp chamber, then a drop of fifty per cent. solution sulphuric acid added, which was worked into the root canals as far as the patient could endure. This was followed by a paste of iodoform and oil of cassia, and the tooth filled permanently. This was over seven months ago, and so far has given no trouble, except for an hour or so after the operation there was some pain. This, I find, is the case in nearly all the teeth which I have treated in this way, but is usually not severe and lasts but an hour or so, and is caused, I presume, by the chromic acid (which has a remarkable tendency to spread) passing through the apical foramen.

I have treated quite a number of teeth in this way since, and have yet to record a failure. Recently, instead of using the chromic acid in crystal form, I have prepared a solution of equal parts chromic and fifty per cent. sulphuric acids, which is kept ready for use in a glass-stoppered bottle.

A convenient way of applying is to take a glass tube such as is used for a drinking tube, and by heating in the flame of a Bunsen burner, draw out to a fine point. This can be dipped into the acid and will take up a small quantity, which can be applied to the entrances of the canals. It is not necessary to flood the pulp chamber, a very small quantity being sufficient. It is well to have two or three of these tubes, bent at right angles for convenience.

Great care should be exercised to avoid touching the soft tissues, as its effects are anything but pleasant; it can be neutralized, however, by a solution of bi-carbonate of soda, which should be kept ready in case of accident.

This method, it seems to me, has advantages over any other yet offered for the mummification of pulps, as by no other method can it be accomplished so completely in so short a time, and I would respectfully commend it to the attention of the profession.

The Evil Results of the New Departure.

By J. P. Geran, D.D.S., Brooklyn, N. Y.

There is nothing which has interfered more with the progress of dentistry during the last twelve or fourteen years than the so-called "new departure." It has been instrumental in bringing about a decadence of both scientific and artistic restorations of the natural organs in gold, in the manipulation of which such men as Varney, Webb and a score of others were noted. The beauty, marvellous taste and skill displayed by these operators, can be appreciated only by those who know how to manipulate gold, and by the patients who are demanding their services.

Much more time is required to introduce gold, but in my estimation, the additional time is a good investment for both dentist and patient. "Filling with gold is simply a question of skill, and skill can never be gained by avoiding hard work."

I have no animosity towards the man who originated, and advocates so vehemently and courageously, plastic fillings. Perhaps some day when he lays aside the perplexities of the dental office and teaching students how to preserve teeth with plastics, *sans gold*, he will awaken to the fact that if he could live over again his life, he would not be able to raise the profession from the slough into which he has so persistently cast it.

It is not ignorance that induces men to follow this despicable new departure; they know better, but it is to shirk their duty to the patients who employ them and who put the utmost confidence in their honesty and ability. If a patient offers the least objection to these plastic fillings, what do these men do but flaunt the new departure in their faces and exclaim, "here are the ideas of a Nestor to the profession."

In speaking with a brother dentist a few days ago, upon this matter, he said it called to mind about a lady patient who, prior to coming to him, had put herself in the hands of one of these "new departure" practitioners. When he made an examination, he found there in both distal and mesial, including buccal, eight or ten cavities all filled with gutta percha, and the accumulations adhering thereto were beyond comprehension. On their removal, the lady exclaimed, "is it possible I have carried in my mouth that disgusting matter." I mention this in order to show the slovenly methods to which the so-called new departure has led.

Amalgam, with its fatal facility of easy insertion, has hindered rather than helped the substantial progress of dentistry.

I trust Dr. Kells's suggestion, that the profession should compensate Dr. Black for a continuance of his investigation, will be carried out, so that he may eventually ascertain why amalgam to most of us "is an ob-

ject of almost humiliation, to find that at the end of a comparatively short time, some of our most careful work in the way of amalgam fillings, fails."

Oxyphosphate and oxychloride of zinc have only a temporary preserving quality, and are deceptive on account of their liability to dissolution at the cervical walls when the bulk of the filling may be good.

My reflections upon, and condemnation of the use of plastic fillings are not intended to be as broad and comprehensive as might appear. I very freely admit that they are at times necessary and serviceable; but the wholesale and indiscriminate filling with plastics, where gold could be used equally well, and with far better and more lasting effect, and far more credit to the practitioner, ought to be deprecated, in my opinion, by every honest professional brother.

The profession must be true to itself, and at the same time, true to its patrons. Just as certain as the Roëntgen rays are expected to revolutionize and locate what is now occult, just so sure is it that success will never be attained by the individual practitioner, unless he provides himself with the proper instruments, keeps step with the advances of the times, devotes himself thoroughly and conscientiously to the practice, and perfects himself in the manipulation of gold—the most serviceable, lasting and reliable of dental fillings.

Experience with Alloys.

By Dr. C. S. MINNICH, Palmer, Neb.

Rats! Chestnuts! Rats and chestnuts let it be then. Rats and chestnuts make a great combination. Put them in the same box and see which last the longest. Let the alloys be the rats, and the teeth the chestnuts, and the experience is apt to be much the same, as all (?) dentists have learned to their satisfaction. But to get down to my experience, I never have been satisfied with the action of any alloy I ever bought, and I have tried all the leading makes. I test them as follows:

A Method of Testing Alloys.

Take a glass tube about two millimetres internal calibre (one-twelfth inch) or larger, and thirteen centimetres long (three inches) and plug one end of it for two millimetres, with the given alloy according to directions, and leave the other end open. Then set the tube plugged end down in a colored solution five centimetres deep (two inches). This solution may be made of half water and

half alcohol, with blue or black aniline in it. A good way is to use a narrow, tall tumbler for the solution and tubes, so that it can be covered to prevent evaporation. Leave the tubes in the solution for two or three weeks and see if any of the solution leaks past the plug in the bottom of the tube. By taking the tubes out and wiping off the outside, any leakage will be seen at a glance. Try this you "Doubting Thomas" and see for yourself. The fillings almost invariably shrink in crystallizing. Suppose there should be no leakage, then examine with a lens to determine whether the filling has expanded. See whether the filling has crept a little way out of the tube, it having been filled even with the glass. I wish that about five thousand of the readers of ITEMS OF INTEREST would test this matter personally and not take my word for it. If the plug shrinks or expands, then what good purpose does it fulfill?

Formula for a Reliable Alloy.

It seems to make little difference whether the alloy is fresh or not, but I obtain somewhat better results by having an ingot, and filing off enough for each day's use.

I have made many alloys and until lately have had the same experience as to shrinkage.

An alloy that gives fine results is made as follows:

Call This No. 1.

Silver	5 ounces.
Tin	4 ounces.
Gold	1-3 ounce.

Call This No. 2.

Silver	5 ounces.
Tin	4 ounces
Gold	1-3 ounce.
Zinc	4 per cent. or 152 grains.

These are melted separately, formed into ingots and filed up as wanted. No. 1 sets quickly and hard but shrinks in setting. No. 2 sets slowly and soft and expands slightly.

By mixing the two half and half, a splendid filling material is obtained, which sets readily, will neither shrink nor expand, does not seem to tarnish, and is of good strength. *The same results can not be obtained by melting both ingots together* and then filing up. It will not be the same alloy practically. A filling so made will still shrink a little.

It has always seemed to me that metals combined in the proportion of their atomic weights should make a resultant perfectly crystalline mixture, which will certainly shrink on setting; whereas if they are not

mixed in proportion to their atomic weights, a resultant mass is obtained that does not crystallize so perfectly and is more heterogeneous, like the concrete used by builders for walls and foundations, that lasts like stone, and grows better by age, too. No. 1 might represent the gravel and No. 2 the cement of the "concrete" filling.

The above is the result of weary years of experiment, and if the profession finds that it makes a fine alloy, I shall be amply repaid for presenting the formulas.

SOCIETY PAPERS

An Open Letter.

Published at the request of the Secretary of the National Association of Dental Examiners.

An editorial in the May number of the *Dental Cosmos*, under the caption, "Our National Beggar on Horseback," makes a direct attack upon the National Association of Dental Examiners.

Anyone reading it has but to remember that there was a time in the history of dentistry when the dental college was purely educational, and when under such condition its diploma was a patent of ability to practice dentistry. In the course of human events all this became changed, until the diploma was only a certificate of variable proficiency. The passage of State laws and the creation of State boards, became a necessity to protect the public against men who, educated and competent men in the profession recognized, did require, in many instances, further qualification. The right to practice was by many of these laws restricted to those receiving, in addition to the possibly questionable parchment, the sanction of the Board of Examiners of the State in which the holder proposed to practice.

For the better information of these various State boards, as to the ability of institutions proposing to educate, a delegate body was formed—the National Association of Dental Examiners. It is to the actions of this body, that the exceptions are taken by an editor who, it should not be forgotten, is also the Dean of a dental school. The very reasons calling the National Association of Dental Examiners into existence are very naturally at variance with the wishes of those connected with dental colleges, and the writer of the editorial in question shows that he undoubtedly supposes that he speaks for the class to which he belongs. But the college men are not all representatives of institutions run for education; some, alas! of these institutions are not run for this alone, but, it is believed, masquerade along this line with an eye to the revenue obtainable.

The fact that a person in his position should be led to make so open an attack is the best evidence of how thoroughly the National Association of Dental Examiners is doing its work.

If, as he argues, the National Association of Dental Examiners has no real power: if, as he says, its rulings "would not seriously be considered in any court of the United States," why does he waste nine pages of his journal upon so harmless a body?

The State boards, even more than the colleges, have the interests of the profession at heart, both generally and locally; and the National Association exists and does its work at the bidding of thirty-seven of the State boards. If its work is harmful, the State boards, who have no financial interests at stake in the cause of dental education, but whose members give freely of their time and money to maintain and to promote the National Association of Dental Examiners, for the public good, would soon bid it cease. If, as that editor states, the report of its work done at the last year's meeting had passed into innocuous desuetude, why does he drag it from under the cover of its three months' dust, into the public gaze of so brilliant a mirror as the *Dental Cosmos*. That he fears to be not true what he so evidently wishes to believe, can be his only justification.

But let us consider his presentation more minutely: By the statement "that this tendency has become a settled policy of the National Association of Dental Examiners is abundantly shown, etc.," an effort is made to make it appear that the National Association of Dental Examiners has attempted to invest itself "with an educational function."

Objectionable Rules Not New.

The plain facts of the situation are these: The National Association of Dental Examiners, at its last meeting, formulated ten "Rules and Conditions, etc." These have practically always been the rules and conditions of that body, and have been previously separately published in its proceedings; but the Association revised them, wiped out all rubbish, and determined to present them together as a clear guide to institutions of its basis of "recognition" for colleges both now on and off its recognized list, determining that what was necessary for new colleges to obtain recognition should also be necessary for the old ones to maintain it. It was manifestly not fair to require higher standards up to which new schools should measure, when there were institutions on the list which did not meet those standards, and the National Association of Dental Examiners in this is clearly acting within the province of its charter "to secure a uniform standard." There is plainly no usurpation of "educational function" in stating its basis of recognition.

The National Association of Dental Examiners may have no real power and certainly does not seek to lay its finger on any institution.

It simply goes about its own business and publishes the list which it recognizes for the benefit of the various State boards, and its conditions for such recognition. Those which comply will be recognized by it. Whether an institution is found in that list or not, is a matter of free choice with any and all institutions. The value of such a position is for them to determine. Certain it is, that under a few State laws being in that list is of no import; but with many, the approval of a local Board hangs thereon.

No Interference with State Laws.

It is to be understood that notwithstanding the use of it in the editorial under consideration, the word "reputable" or "reputability," assigned to it by the editor, is not used by the National Association of Dental Examiners. Its existence in any State law is not the work of the National Association of Dental Examiners. That body never tampered with or directly influenced any State law. Many States have found the necessity for such a word, and have of their own accord inserted it in their statutes; and by separate resolution of many State boards it is interpreted to mean the list of colleges recognized by the National Association of Dental Examiners. The editorial is therefore in error in saying that the National Association of Dental Examiners sought "mainly by attempting to legalize its stamp of reputability by incorporating in the State dental laws a clause, etc." The editor reads backwards.

The publishing of a list of colleges recognized by the National Association of Dental Examiners is at the direct instance and request of the State boards, that they may have something upon which to determine reputability.

The editor goes on to further inquiries—

"Have their suggestions and recommendations been other than irrational, etc.?" and suggests one of these irrational things to be "depending upon committees of inspection and general gossip as their sources of official information." Perhaps the editor does not know that the committee on Colleges of the National Association of Dental Examiners, is perhaps the best informed body in the United States regarding the character of any and all the colleges; and that not upon "general gossip," but upon direct information from the Deans of the institutions over their signatures, and by official written reports from the boards of the States within whose boundaries the colleges are located. The information in these reports being the result of personal visits by members of these Boards to the colleges during their teaching sessions.

Surely this is not, as he is pleased to state, "an attitude of exclusiveness, shutting themselves off from all college relationship."

Regarding the reference in the editorial to the procuring of a charter by the National Association of Dental Examiners, little need be said other than to state that the chief object was very pacific—to enable the National Association of Dental Examiners to have a legitimate permanent place in which to hold its annual meetings—the City of Washington; that its sessions then being held earlier than the American Dental Association its meetings should no longer (as has been charged) deter its members from giving their full time and attention to the American during the sessions of that body.

Origin of the Idea of Rupture

That there has been some hue and cry of a possible fracture of the pleasant relations heretofore existing between the National Association of Dental Faculties and the National Association of Dental Examiners is not to be denied. But from the members of which body has it emanated? The Chairman of the Executive Committee of the National Association of Dental Faculties has stated "the enforcement of the circular issued by the N. A. D. E. is liable to produce a rupture."

The President of the National Association of Dental Faculties has stated "it would bring on a very serious warfare between the two associations."

A few of the members of the National Association of Dental Faculties have made the statements, "I fear from expressions that I hear, and from the language of your circular, that we are likely to have trouble between the College men and Board of Examiners."

"Will certainly break the bonds of fellowship and cause trouble."

But not one word has come from any officer or any one representing the National Association of Dental Examiners. Nothing has issued from them but the most conciliatory, pacific and conservative utterances. Indeed, until this letter, they have never breathed even the sentiments of the Faculties' representatives quoted above, and would not do so now, but that the matter has been publicly stated by a Dean who has proposed to "critically examine the situation," and demands, therefore, that this critical examination should not be allowed to consist only of his innuendoes, but that the facts be given at least to the State boards. It is impossible for any one to produce from the nearly three hundred letters written since last August, by the Committee on Colleges of the National Association of Dental Examiners to College men, or to the representatives of College Faculties, any which contain sentiments or expressions

other than of a cordial and friendly nature. Only sentences like these appear:

"We want all the good colleges to have the road to recognition made as easy as possible."

"We make these suggestions because we are sure that you wish your application to be in proper shape to receive no setback."

"The Committee on Colleges does not intend to be arbitrary, but to meet the colleges half way in the spirit of fairness, and work with them in the interest of a broader dental education."

That such have been appreciated by the various college correspondents to whom they were addressed, is made evident by the language in which the replies have been couched, containing as they do expressions like these:

"I wish to express to you our appreciation of your kindness."

"Thanking you for your kind consideration."

"With assurance of esteem."

In view of all this array of facts, we may well inquire why all this tempest in a tea-pot which has culminated in an Editor and Dean appealing to the profession under such an undignified title?

All because the National Association of Dental Examiners, to more thoroughly carry out the objects of its existence—"to secure a high and uniform standard of qualification for dental practitioners"—has adopted ten little rules and conditions, the more important of which are the rules of the National Association of Dental Faculties. Was it because the National Association of Dental Examiners signified their intention to enforce these rules of the National Association of Dental Faculties? The National Association of Dental Examiners has done nothing else but signify their intention. It has not, as yet, touched any institution. Before proceeding in any way to action, the conservative spirit of the National Association of Dental Examiners led to an inquiry through its Committee on Colleges. The Faculties have been asked individually by that Committee to express to it their opinion as to the feasibility of enforcing the rule made and adopted by the National Association of Dental Faculties relative to preliminary requirements of matriculants; and also subsequently asked to further express an opinion on the enforcement of Rule No. 6 of the National Association of Dental Examiners.

Leading Colleges Favor the Rules.

Favorable replies were had from nearly all the colleges then written to, the nature of which is to be judged by the following, which we quote:—

"In all respects we comply with the requirements of the State Dental Examining Boards."

"In a general way, we most heartily approve of the rules set forth."

"Our Faculty is ready and willing to do its part in enforcing these requirements."

"We heartily endorse the rules and conditions sent."

"The National Association of Dental Examiners is the 'power behind the throne' that delinquent colleges are afraid of. I certainly think Rule No. 2 can be enforced."

"Our College will be glad to subscribe to them."

"You can count on us to back up any advance or improvement in teaching."

"We are prepared to endorse the highest standard you might establish."

"At a recent meeting of our Faculty, the Rules and conditions of the National Association of Dental Examiners were unanimously adopted as our code of action."

What are all these "rules and conditions" of the National Association of Dental Examiners anyway? Let a fair analysis be made of them.

The action taken by the Committee on Colleges, immediately suspending Rules 2 and 6, ought to have wiped out all the bugaboo, although these two rules contain little other than what the Faculties' Association has adopted. Rules 1, 3 and 7 apply to colleges not on the recognized list, and contain nothing but a proper provision for a final application which shall be not "general gossip," but a tangible written document, properly filed with the National Association of Dental Examiners, verified by the State boards, and not to be acted upon with undue haste.

Rule 10. Is simply explanatory. This leaves but four other rules to be considered.

Rule 4. Applies more to State boards than to colleges—the portion mentioning colleges being necessitated by knowledge of a single case once occurring, and it is believed that no college of standing would think of obstructing their State board in its investigation. So this is harmless.

Rule 5. The first clause is the rule of the National Association of Dental Faculties—and the second clause is no hardship—as where it was found to be so, in warm climates, the interpretation has been made that the college should know in lieu of keeping the students at the college, that the students actually take this three months with their individual preceptors. The third clause is practically the requirement of all the colleges now.

Rule 8. This rule, so pointedly objected to by the editorial, is manifestly but fair and just. Fairness without favoritism can be assured by it.

Rule 9. As most of the colleges put in their announcements that they comply with all the rules and conditions of the National Association of Dental Faculties, it only seemed to be just to the students matriculating to ask that they also state that they complied with the rules and conditions of the National Association of Dental Examiners, as the graduate's right to practice in not a few States is more affected by non-compliance with the National Association of Dental Examiners than by non-compliance with the National Association of Dental Faculties.

The Committee on Colleges has suspended two of these rules, and by what process of reasoning can it be made to appear that the same conservative spirit would not prevail in any attempt to enforce any of them?

It is a fair inference, from the facts here presented, that the cry of strained relations and the editorial attack do not contain the real issue, but that this false issue has been produced by a few, very few men, as a cloak to an issue far more important to the Faculties Association—a disaffection on the part of some of the members of the National Association of Dental Faculties, caused by its adopting a high preliminary standard, which the National Association of Dental Examiners, perhaps unexpectedly to the framers thereof, has signified its intention to see carried out. A few institutions, situated in the south and middle west, have threatened that if these rules are enforced, they will secede from the National Association of Dental Faculties, for the statement is quite current "were you to go on at present and enforce those rules, a number of schools will withdraw from the Association, and will make a desperate fight for their existence."

Did these weaker institutions believe that the National Association of Dental Faculties would not enforce them?

In conclusion, the National Association of Dental Examiners has by its action only pledged its assistance in maintaining the highest educational standard possible, and will do all it can to avert any uncalled-for lowering of that standard, as has been hinted at in the statement made by a college representative, "am only apprehensive that the Faculties' Association may go back upon the new requirements for entrance."

The National Association of Dental Examiners will undoubtedly deal justly and fairly, and allow all necessary time for full adjustment to any proposed changes, and at the same time will spare no pains to preserve all fraternal relationships.

Sincerely yours,

L. ASHLEY FAUGHT,

G. CARLETON BROWN,

Committee on Colleges of the N. A. D. Ex.

Central Dental Association of Northern New Jersey.

Is the Mercury in Amalgam Injurious?

A regular meeting of the Central Dental Association was held in Newark on the evening of April 19th, 1897. The topic for the evening's discussion was one of the questions propounded by the American Dental Association, "Is there any proof that the mercury in amalgam is injurious?" The discussion follows:

Dr. Osmun. I have had proof that amalgam fillings had been detrimental to the health of patients. I have had, perhaps, a dozen cases in my practice, cases that had been referred to me by physicians who stated they thought the mercurial fillings had proved detrimental and asked me to remove them. Upon the removal of the mercurial fillings and the substitution of gutta percha, cement or gold, in these cases there occurred a cessation of the troubles which had existed. I do not believe that, ordinarily, the mercury in such fillings is detrimental to the health of the patient, but idiosyncrasies of constitution sometimes exist, which seem to contraindicate any combination containing mercury as we find to be the case with other drugs; for example we find patients who cannot tolerate morphine, which acts in such individuals more as a stimulant than as a narcotic.

I also believe that in the every-day practice mercurial fillings are, in the main, detrimental to tooth substance. As I continue in practice my experience teaches me that gold is the best material to use in a tooth that needs saving. Not only my own experience, but the work that I see from my brother practitioners, justifies me in taking this position. Among my own patients for whom I did work five or ten years ago, where I put into the mouth five or six gold fillings, and six or seven amalgam fillings, when they come back to me, I find that the percentage of successes with gold is larger than the percentage of successes with amalgam. I observe another thing; that the margins around the gold fillings are just as good, where there has not been a recurrence of decay, as they were when the gold was first placed in juxtaposition with the tooth substance. With few exceptions I have never yet found that to be

the case with amalgam fillings. I also note that when I take out an amalgam filling, which has been in the tooth for some time and replace it with a gold filling, it will not serve as well as it would probably have done had the amalgam filling never been placed in the cavity. That is my experience, day after day; and I am using more and more gold, and less and less amalgam, every year; yet I said on this floor, only a short time ago, that amalgam is one of the necessities of the dentist; he could hardly practice dentistry without it, any more than he could practice dentistry without burs, excavators or rubber dam; it is absolutely necessary, he needs it and must have it; but I contend that the more gold a dentist uses in his practice the greater the percentage of successes he will have.

Dr. Fish. Permit me to ask Dr. Osmun: Can you give us the diagnostic points by which to know that amalgam would be contraindicated in such cases as those which you have cited?

Dr. Osmun. They were similar to all cases where the amalgam comes in contact with the mucous membrane. If the cases had appeared for treatment in the ordinary way I doubt very much that I would have removed the fillings. I should probably have treated the gums; but coming to me with a positive request from a physician to remove the amalgam and place some other kind of filling in the teeth, I thought it best to acquiesce. I have always had a doubt in my mind, whether these cases might not have been amenable to other treatment; but whether it was the treatment given by the physician afterwards, or the substitution of gold for the amalgam, there certainly was a great change for the better.

One case I remember very distinctly; the mouth was full of amalgam fillings; splendid amalgam fillings; as good fillings of the kind as I have ever seen; as perfect as an amalgam filling could be, but the gums were tumefied and sore, the mucous membrane in bad condition, and the patient came to me with orders from his physician to have the amalgam fillings replaced with some other kind of material. I concluded to refer the patient back to the physician, suggesting that he try some systemic treatment. But the physician sent him back with an imperative demand that I remove those fillings, saying that he had treated the case long enough, and that he wanted the fillings all removed; so there was nothing to be done but to remove them, which I did, replacing some with gold and some with gutta percha. The result was that the mouth was soon very much better; it was a marvelous change, perfectly wonderful.

Dr. Sanger. As regards the effect of amalgam upon the system of some patients, I do not think there is any doubt that some patients present themselves to the operator in whose mouth no alloys should be placed; but, those cases are

rare. The very fact that these cases are so seldom met substantiates the statement that amalgam stands as one of the great dependencies of our profession. It is the salvation of the teeth of the poor. We are obliged to consult, in a measure, the means at the command of the patients who present themselves, and no man who is a true professional man will turn aside any patient, because that patient cannot afford the most expensive treatment. The true professional man, is the man who will adapt himself to the needs of the patient and his means, and at the same time give that patient all, and more than he is able to pay for. Without amalgam he cannot do this; with it he can.

Dr. Boice.

To me, the dentist who allows physicians to dictate to him that he shall remove amalgam fillings and replace them with gold or something else, seems altogether too subservient to the medical fraternity. I do not believe that mercury does any practical harm, and it cannot be proven that it does. If it is a question of saving teeth, that is an entirely different subject for discussion.

I have no objection to stating a case that passed through my hands. Some years ago a physician in Philadelphia told a patient to have some amalgam fillings taken out; she went to a dentist, who declined to take them out. Another dentist took them out and refilled with gold. Her health did not improve. The same dentist who had refilled all the teeth with gold once more refilled three-quarters of them with amalgam; still the patient did not improve in health. She fell into my hands having both gold and amalgam in her mouth. She has worn a gold plate, and a rubber plate, and she says gold plates are very injurious to her health. She now wears a rubber plate, which she has never found injurious. That rubber has the red-bisulphite of mercury in it, but she could wear that for a year and you could not see any injurious effects from it.

The effects of metals on the teeth vary. In one case I made a little gold plate, extending around the bicuspid; I said to the patient, "This plate will probably irritate the mouth, the mucous membrane; be a little careful." He came in the next morning and reported that he could not eat anything, and could not touch the tooth. I drilled some little holes in the gold plate, and filled them up with a composition consisting of zinc, tin, silver and mercury, and told him to come and see me at half past three. He did not come, but I got a note from him saying, "I am very busy, I am entirely comfortable." I believe that more teeth are saved with amalgam than with gold. I challenge any gentleman to show a solitary case where it can be proven that the mercury in an

amalgam filling has injured the health of the patient. I have never seen it demonstrated, nor any proof to sustain it.

Dr. Adams. I recall a case that came under my notice two years ago. A patient who suffered with neuralgia; she was treated by her physician, and I had an interview with him in which he told me that he thought the headache or neuralgia came from the use of amalgam in the patient's mouth. I told him that I was sorry to disagree with him, that I had been using both amalgam and gold for a number of years and I had never up to that time been able to convince myself, nor ever had been convinced, that amalgam fillings were conducive to neuralgia any more than a gold filling. I did not remove the amalgam filling, and the patient was cured of the neuralgia. At frequent intervals after that I had interviews with this same physician and he never failed to deprecate the use of amalgam. I believe, sir, as has been said here to-night, that we cannot get along without amalgam in dentistry, and I don't believe that the mercury in it is injurious to the health of the patient.

Dr. Adelberg. This question of amalgam and the citing of medical authorities who deprecate the use of amalgam, from a standpoint which I believe most of them cannot explain, reminds me of a little episode that happened at the time when an exhibition was given of celluloid work and its manipulation, in the old S. S. White Dental Depot at Ninth street. The clinician was Dr. Perkins, of Albany. A number of questions were asked and answers given, and one dear old soul who hailed from Elizabeth and Newark at the same time, thought he would ask a question, too. He looked over his spectacles and asked Dr. Perkins: "Will it be affected by the gastric juice?" "Yes," said Dr. Perkins, "if a man is foolish enough to swallow it."

Dr. Hardy. I do not believe that amalgam is injurious to the system. I once had a patient who was suffering from neuralgia, whose physician sent him to me to have some amalgam fillings removed. I removed them at his request, but the patient still continued to suffer from neuralgia. I do not think there is any danger from the mercury in an amalgam filling at all.

Dr. Chitterling. Mr. President, I have had one experience that may be worth relating. It was not a case sent to me by a physician, it was the physician himself. He had just recovered from quite a long and severe illness, followed by neuralgia, and he was thoroughly convinced that certain amalgam fillings were the cause of the severe neuralgia that followed his illness. He asked me to remove the amalgam fillings and put in something else, just to try the ef-

fect. I told him I did not think the fillings were the cause of the trouble, and I found that the patient had been suffering from neuralgia before this illness; but, on the grounds stated, I removed the fillings and put in gutta percha in some cavities, gold in others, and in some a composition of tin and gold; and finally all the amalgam fillings were taken out and the teeth filled with other materials. The case was watched for six months and the neuralgia still continued; and some of the fillings were again replaced with amalgam; and at last accounts the neuralgia was still present. I should imagine that the trouble was rather systemic than caused by mercurial fillings.

Dr. Richards. Mr. President, I don't see how we can say that amalgam fillings are injurious. I have been putting them in for a great many years, probably 22 or 24 years, and I have had very little trouble with them. I quite agree with Dr. Sanger in regard to amalgam, that it is impossible to dispense with it in dental practice. I will relate one particular case; a lady twenty-two years of age; she consulted a physician in Orange, complaining of headaches, which were attributed to a couple of amalgam fillings in her teeth. Her physician advised the removal of the fillings, and I removed them. I then applied the rubber dam, dried the cavities out thoroughly, capped the pulp with oxyphosphate, and on top of that put Hill's stopping, and told the lady to call on me at her convenience, in a week or two weeks. She called on me three weeks after and said she had no more headaches, and she felt better.

I really think that an amalgam filling is better in some respects than a gold filling. A good amalgam filling is certainly better than a poor gold filling.

Dr. Meeker. About fifteen years ago the American Academy of Dental Science of Massachusetts, at Boston, discussed the question, as it is put here this evening: "Is the mercury in amalgam fillings injurious to the system?" In all of their experience, and in all the papers read on that subject, there was no direct proof that the mercury entered the system. The Boston society has in its membership a number of homoeopathic dentists who follow that school of medicine, and consequently they were inclined to believe that the mercury in amalgam fillings might create a systemic disturbance. Dr. Williams and Dr. Black have both made a series of extended researches in this line, and in Dr. Black's articles in the *Cosmos* he reports no evidence that mercurial fillings have created any systemic disturbance.

I had a patient a few years ago, a strong, robust, married woman, without children, showing every indication of the best of general health, who had large canker sores in the mouth, an eighth of an inch deep. I

could put the end of an instrument in some of the holes, they were so large. She had been under the care of three different physicians in Newark, who had treated her by different methods; sometimes a meat diet and sometimes a cereal diet, and sometimes eggs and fish diet, but no improvement was effected. I remember that just before she came to me they had kept her on a lean meat diet for six weeks. She said that her physician had told her that the amalgam fillings in her mouth must come out. I looked at them, and said that I did not believe they produced the disturbance, that I would stake my reputation on that, and I would be willing to pay the cost of a visit to Dr. Heitzman. Dr. Heitzman examined her mouth. He took part of one filling and afterward made a microscopical examination of it; he also took some of the sputa from the mouth, and some of the exudation from the cankers, and examined all with the microscope; he wrote me a letter stating that there was nothing to indicate that the fillings were the cause of the trouble. He surmised that her trouble was inherited. The lady then went to some dentist in New York, and he advised the removal of the amalgam fillings. Then she came back to me, and wanted an estimate. I guess his charges were a little higher than mine, because she came back to me. I removed every amalgam filling from her mouth and replaced them with gold, with the exception of two molars, in which I put oxyphosphate. She went home for her summer vacation delighted, and at Asbury Park, during our summer meeting there, I met her; she was rosy-cheeked and bathing every day; but when I looked at her mouth I found the cankers were still there, just as big as ever. That is six years ago, and every fall and spring these sores recur.

I have had as a patient, the widow of a homoeopathic physician who has an idiosyncrasy which cannot tolerate strawberries; she said she never would have an amalgam filling in her mouth. I worked for her I think about eight years, and during that time I have inserted two amalgam fillings in her mouth, of which she does not know, and I do not see any difference in her health.

Dr. Fish. I fail to see myself how any systemic derangement can arise from the mercury in amalgam fillings. It being an inert substance, acted upon only by strong acids, how the secretions of the oral cavity can act on it is a mystery to me, and how the presence in the mouth of amalgam can prove deleterious to the health of the person is beyond my conception. If amalgam fillings are detrimental to the health of the patient I think it is more due to faulty manipulation than to any other cause. If a man spends two or three hours in placing a gold filling in a tooth, he is very likely to spend considerable more time in finishing that gold filling than he will devote to an amalgam filling, and therefore he will probably have a better result.

Stomatological Club of San Francisco.

MEETING OF MAY 4. 1897.

Cataphoresis.

Reported by CLYDE PAYNE, D.D.S., San Francisco, Cal.

Discussion of Cataphoresis was made the special order for the evening. President Dr. Russel H. Cool in the chair.

Dr. S. L. Strickland. For a year I have been experimenting with cataphoresis, and up to within a month ago I have used a solution of 15 drops guiacol to 2 grs. cocaine. For the last month I have used salt water with the cocaine instead of guiacol. With salt water I rarely pass less than one and sometimes as high as three miliamperes through the tooth. I use a half-teaspoonful of salt to a two ounce bottle of water. The resistance seems to be very much less, and with the same voltage I get much more current. Within the past week I have had some trouble with two patients; on one I could only use one cell, and on the other two cells, on account of the pain; yet I produced anaesthesia. With guiacol I always used at least four cells. I dissolve three grains of cocaine in twelve drops of water. I hold the cocaine over an alcohol lamp to dissolve it, and it will remain dissolved. There is never any precipitation.

Dr. S. E. Knowles. If you take two fluids of unequal density, one pure water and the other salt water, where there is septum that is actually impervious to the fluids on immersion there will be osmosis. If you take a bladder filled with salt water and immerse it in pure water, enough pure water will pass into the bladder to break it, if the densities are sufficiently unequal.

Dr. W. H. Bryant. The idea prevails that we should use a fifty per cent. solution of cocaine. A chemist will tell you that a fifty per cent. aqueous solution is an impossibility, unless kept in a sealed tube, dissolving the crystals in boiling water. I have only heard of the oleate of cocaine, hydrochlorate of cocaine and the alkaloid of cocaine being used in dentistry.

Dr. Frank C. Pague. What is the average time required to produce anaesthesia?

Dr. S. L. Strickland. With guiacol and cocaine one-half hour, when the pulp is not exposed. I had a lady in my office about a month ago who was very skeptical about cataphoresis, as she said that electricity had no effect on her. The average patient will endure two cells without any indica-

tion of pain. The third cell causes them to wince. In this case I turned on ten cells without causing pain, and within five minutes fifteen. Anaesthesia was perfect in a few minutes, and I took out the pulp.

Dr. W. H. Bryant. How long does pain continue after the extirpation of the pulp?

Dr. S. L. Strickland. Pain is only induced by the electric current. There is no pain when the current is off. The pain is not great, just a "toothache." Last Tuesday, when I returned to my office, a patient was waiting for me to have a tooth extracted. It was a bicuspid, with a large cavity, having fungous growth in the cavity. I told her that I could save the tooth. She said that she did not want it saved; she wanted it extracted. I had the electricity on for five minutes, and got the hypodermic needle ready to inject cocaine. She said that the last dentist she had seen had told her never to use cocaine, as she had fainted when it was used before. She was a very nervous patient, and when I started to take the tooth out she grabbed my hand. I cautioned her not to touch me until I hurt her. I worked away, and she did not move while I extracted the tooth. That was with a saline solution of cocaine. She had a molar root, and I got that out with an elevator without any trouble. I believe you never can injure a patient by the cataphoric application of cocaine.

Dr. F. L. Pratt. Some such cases are reported.

Dr. S. L. Strickland. I think that a large portion of my success is due to my negative pole. I take a piece of air chamber metal, cut five inches long and one and one-half inches wide, and cover this with a piece of linen cloth and cotton. This I place around the neck of the patient, and attach the negative pole to it. The more contact to the negative pole the more amperage. I do not have them hold the negative pole in the hand, because the hand affords greater resistance to the current.

Dr. Frank C. Pague. Three weeks ago, in order to accomplish a piece of work necessary to be finished in a specified time, I found it necessary to devitalize several pulps. The first that I attempted by cataphoresis was a large cavity in the left superior cuspid. By means of a dry cell battery and the use of sixteen drops guiacol to three grains of cocaine, I was able to produce anaesthesia in twenty-five minutes, and to extirpate the pulp with little or no pain. The results were so pleasing that I treated the others in a like manner. The second was a right superior second molar, large approximal cavity. Inside of fifteen minutes I was able to drill into the pulp, but the pain was so se-

vere that I was compelled to make a second application, and then, by means of a large, rapidly revolving bur, I cut the pulp from the pulp chamber. As there was still considerable pain, I injected a twenty per cent. solution of cocaine into the pulp canals, when I was able to complete the removal of the pulp. The third tooth was a second inferior bicuspid, with pulp in a congested state, for tooth had ached. The application of electricity to the cavity produced extreme pain at the outset. After ten minutes, the pain still continuing, I prevailed on the patient to allow me to remove part of the debris, and I then applied cocaine and turned on the current for fifteen minutes without satisfactory results. I then took damp cotton, dipped in cocaine crystals, and placed it in the cavity, using five cells, and in five minutes five cells more. I followed that up to twenty cells, and then attempted to drill into the pulp chamber. The pain was so severe that the patient could not endure it. Some writer has suggested, under such circumstances, to drill into the pulp immediately. I did this without telling patient what I was going to do, and the pain, of course, was terrific, but relief was instantaneous, for tooth had been aching all through the operation. I then used cataphoresis, twenty cells, and was able to remove the pulp without further pain. From the right lower cuspid I removed the pulp in thirty minutes without any pain whatever; first turning on five cells and then moving up as rapidly as patient could stand it, to fifteen cells, where I left it twelve minutes. In that case, as well as in the left superior cuspid, I removed the pulp intact.

Dr. F. L. Platt.

I have had only a limited experience in cataphoresis. I have used it seven times—five times in excavating and twice in bleaching. I kept a record of them because I wanted to know the average results. I used the 110 volt, direct current, Dental Protective Supply Co.'s apparatus, which is so arranged that the first stop allows six volts to be used, the second twelve, the third twenty, and the fourth thirty. It is impossible, with this apparatus, to get the exact measure of the amount of current used. I used it only in cases where the dentine was so sensitive, that I positively could not otherwise excavate the cavity. In the first case there was a shallow cavity on the lingual side of an inferior left molar, extremely sensitive. I applied the rubber dam, and made an application of a fifteen per cent. solution of cocaine in guiacol (about 64 grains to the ounce). In my apparatus the patient turns on the current. I said, "If there is pain, stop." She turned the lever very slowly. In eighteen minutes she had turned on six volts, and I continued that for ten minutes. Altogether I had used it twenty-eight minutes, and I then excavated the cavity. There was no pain during the application of the current, and no pain in excavating. The

next case was bleaching a superior left central incisor. The patient had large, unusually white teeth, and this discolored tooth greatly disfigured her. I found the canal putrescent, treated it, and filled the upper portion of the pulp cavity with gutta percha. I used twenty-five per cent. pyrozone in the pulp cavity, and applied the positive electrode. The patient could feel a little tingling sensation about the apex of the root. In ten minutes the patient had turned on twelve volts, and in a few moments I could see the tooth turning white. In twenty minutes the discoloration had entirely disappeared. The next case was a disto-proximal cavity in an inferior right bicuspid. After applying rubber dam, I slipped a piece of rubber between the teeth, and fastened it with sandarac varnish, to insulate the tooth, as the second bicuspid had a large proximal gold filling. In fifteen minutes the patient reached about four volts, and this was as much as she would use, as it was slightly painful. In twenty-eight minutes I excavated cavity painlessly. In a superior left lateral incisor I used ten volts for twenty-five minutes and excavated cavity without pain. Patient said that there was a faint tingling sensation through the tooth. The next patient was a physician, and I asked him to note the action carefully. The superior right bicuspids were very badly decayed and very sensitive. I had formerly used hot air, oil of cloves, carbolic acid, and chloride zinc, with very little effect. He turned the current on very rapidly, and in fifteen minutes had reached ten volts, and I continued this for seventeen minutes. I then excavated as though the teeth were devitalized. He said there was no pain whatever. I had another case of bleaching—a superior lateral incisor that had been filled with amalgam. The tooth was devitalized and black. Patient turned on twelve volts in a few minutes. I kept it there for twenty-five minutes and tooth had almost resumed its natural color. The patient had to go away, and I could give no more time to this case. Friday last I used four volts in a cavity for fifteen minutes and excavated. Patient said there was no pain. So far I have used cataphoresis with complete success, and mostly in shallow cavities. Where there is pain I think it is because the current is turned on too rapidly, or not sufficiently well controlled. I have been told that by simply wetting a pledget of cotton and dipping it into the crystals of cocaine, better results are obtained than with guiacol-cocaine.

ORTHODONTIA

Treatment of Prognathism of Upper Jaw.

By Prof. Wilhelm Sachs, Breslau, Germany.
Abstract by George Randorf, Berlin.

I will report a typical case, from my practice, which may be of interest to those occupied with the correction of irregularities, because it facilitates progress, by simplifying the usually lengthy process of treatment.

One of the most disfiguring anomalies is a prominence of the anterior superior teeth. Many writers have explained this malposition as a consequence of thumb-sucking. This may account for some cases, but in many others the condition is the result of heredity. From a purely prac-

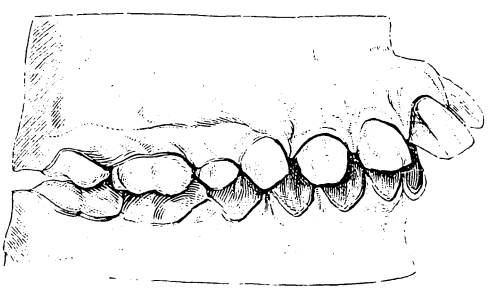


Fig. 1.

tical standpoint, we may ignore the etiological aspect of the subject, because, whether acquired or congenital, the treatment must be the same. It is the dentist's more important duty to find the surest method of restoring the teeth to a normal position. Cosmetic considerations, as well as the preservation of the teeth themselves demand this.

In prognathism of the upper jaw we find the lower teeth occluding with the slanted palatal surfaces of their antagonists at or near their necks, and in more pronounced cases the lower incisors strike against the gum tissue of the upper jaw. Pressure during mastication is in such a direction that a leverage is exerted, the tendency of which is to throw the up-

per teeth further outward, the teeth spreading fan-shaped, slowly elongating, and finally loosening, until removal is necessary later in life. This theory contradicts the prevailing notion that regulation of teeth is apart from their preservation. I further believe that not only a prominence of the teeth, but other abnormal positions, whether of a single tooth or the entire set, may lead to premature loss. Teeth which overlap or stand crowded together afford lodgment for food and invite caries. Orthodontia therefore preserves, as well as rearranges teeth.

Fig. 2.

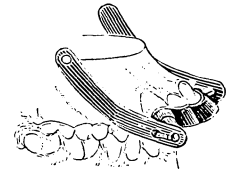


Fig. 3.

The majority of dentists hesitate to undertake the correction of a progathous jaw, because the text books describe complicated apparatus, and treatment covering so long a period that only a few feel that they can command a fee commensurate with the time and work required. Some have merely recommended to their patients that they should themselves exert pressure with the fingers. This can accomplish no real benefit, as constant pressure is needed, and an interruption of even a few days permits the teeth to return to their anomalous position. Moreover, even

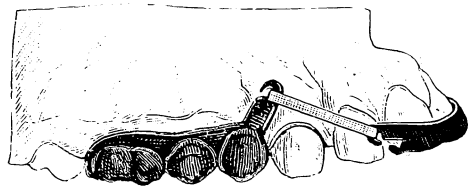


Fig. 4.

after the teeth have been forced into position a retainer must be worn for months, and sometimes for years.

The case chosen as illustrative of my method is of interest because undoubtedly hereditary. Two sisters presented the same degree of prognathism, and though the mother stated that in childhood both had been addicted to thumb-sucking, I am convinced that the deformity was inherited, as the father showed the same form of jaw, in a less marked degree. It is possible that the thumb-sucking may have increased the protrusion.

Some years before I had regulated the elder girl's teeth, with gratifying success, which is still apparent, the teeth not having retrogressed. The younger girl was brought to me at the age of ten, but I deferred the undertaking for a couple of years, as I rarely begin the regulation of a whole arch prior to the appearance of all the successors of the temporary set. Fig. 1 shows the casts of the little patient at the time when the regulation was begun.

Figures 2 and 3 show the well-known appliance recommended by Kingsley in his work "Oral Deformities." The illustrations clearly indicate the method advocated.

If pressure be brought to bear upon teeth in a protruded position, the force being exerted solely upon the labial surfaces, the result, when they are finally brought into proper place, will be an elongation of the teeth, either apparent or real. To prevent this, in the Kingsley apparatus, the mouth appliance covers the cutting edges of the teeth, and the elastic

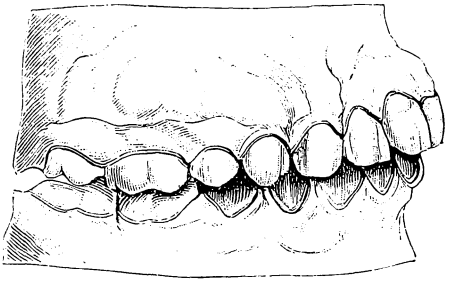


Fig 5.

bands extend back to the skull cap in an upwardly oblique direction, the result being that the teeth are driven up into their sockets as they are carried backward.

The Kingsley appliance serves its purpose, but very few patients can be persuaded to wear such a cumbersome and disfiguring apparatus.

My method obviates the necessity for the skull cap, as well as the protruding arms of the mouth fixture, yet acts so as to prevent elongation of the teeth. An appliance of clasp-gold wire was constructed to fit closely the labial surfaces of the incisors, extending over the cutting edges. A silver plate was fitted to the roof of the mouth, not reaching the incisor teeth, a space of three quarters of an inch being left to permit the backward movement. As the occlusion in the posterior region was very accurate, leaving no room for the passage of clasps, the plate itself was extended over the cutting edges of the molars and bicuspids. (Fig. 4.)

To this plate, opposite the bicuspid, was soldered a stout extension, as shown in the illustration, in the free end of which a slot was cut for

the reception of the rubber ligature. The two parts of the appliance being in position, and united by a rubber ligature from the extension in the bicuspid region, to the fixture over the incisors, it is seen that the pressure exerted, while backward, is slantingly upward, which would obviate any elongation. The patient herself renewed the ligatures two or three times a week, using smaller rings as the case progressed, until the result shown in Fig. 5 was obtained.

The retainer, shown in Fig. 6, was worn for eighteen months, by which time the teeth had become firmly rooted in their new position. This retainer was also of silver, swaged to fit the roof of the mouth, and extending fully over the molars and bicuspids, but only engaging the cutting edges of the anterior teeth sufficiently to hold them in position, without showing too much metal.

The method here described has the advantage of not disfiguring the patient during the regulation of the teeth, and does not annoy the wearer after the first two or three days. The further fact that the chief care of

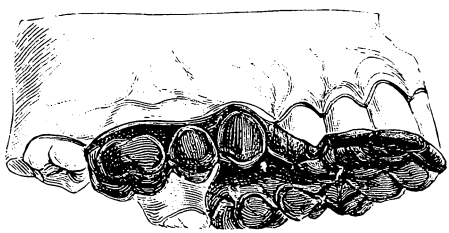


Fig. 6.

the plate may be attended by the patient is especially advantageous where the child lives out of the city. A rubber plate may be used in place of the metal, but is less satisfactory, since it must be thicker to avoid breakage. I have utilized this apparatus in ten cases with the greatest success, and heartily recommend it to my colleagues.

A Somewhat Similar Apparatus.

The above article, forwarded from across the ocean, is abundant evidence that all that is original in dental science does not necessarily come from America. Yet it is noteworthy that dentistry has reached such a plane, and so many are working along similar lines, dealing with similar problems, that an absolutely original method or device is very rarely recorded. The method described by Dr. Sachs, and more especially the illustrations accompanying it, is practically a description of a method which I had supposed entirely peculiar

to myself, and it may be of interest to have both instruments described and illustrated together.

Dr. Sachs has constructed his appliance in recognition of the possibility of elongation of the incisors in progress of the backward movement, but his carrying of the plate over the masticating edges of the teeth seems to have had no special motive beyond the convenience of so doing, because the occlusion prevented his reaching the buccal portion of the mouth, for his arm, which was to hold one end of the ligature.

My own appliance was evolved on opposite lines. It is usually believed that if a band is placed around a molar, and used for resistance in moving an anterior tooth, that the full resistance to the force includes the bicuspids as well as the banded tooth. Long ago I concluded that this is only partially true, and that it is possible to cause an elongation of a single tooth thus used for a resistance, despite the fact that the arch

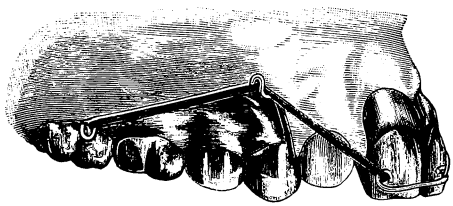


Fig. 7.

may be filled with teeth. Where I have feared such a result, I have used pure gold plate, about 29g, and struck up a continuous cap, covering the molars and bicuspids, and partly lapping the gum at the palatal aspect. To this continuous cap I have soldered such wires, hooks or other attachments as would be required. This gold cap was then firmly cemented to the teeth, binding them all together, and thus assuring me that I might depend upon them all as a single anchorage. These caps are made of pure gold, as with that pliable metal they have a wider range of usefulness, it being possible thus to cap shorter teeth than were a more resistant metal used. When placed in position the gold is burnished tightly to the buccal and palatal surfaces of the teeth, and with a small egg-shaped burnisher and gentle taps with the mallet, is forced between the teeth, thus getting a hold not attainable with silver, German silver, or even with platinum.

Having used these continuous caps for years, it was but natural in dealing with a patient who declined to wear the skull cap, that I should construct the appliance shown in the accompanying illustrations. In this instance the patient was but nine years of age, and it was necessary, as a primary step in the correction, to retract the two central incisors. A cap of pure gold was constructed by swaging, and this, having a wire soldered across the labial surfaces, forming two loops, was then cemented to the two teeth. Continuous caps for the molars (both temporary molars on each side being still in place) were then made in the usual manner, except that the metal was extended to cover the gum at the buccal aspect, extending high up under the lip opposite the site of the first bicuspids (had they been present). The upper edge of this plate was made rigid and comfortable by soldering a wire along the edge. At the highest point, in the bicuspid region, a hook was fashioned, and another opposite

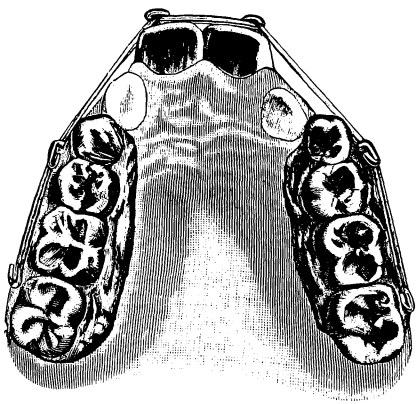


Fig. 8.

the molar. These caps were also held in place with cement. At the outset the rubber ligatures were attached, stretching from the corners of the incisors to the first and highest hooks on the back pieces. Later, as more pressure became endurable, the ligatures passed over these hooks, and back to the hooks opposite the molars. In either arrangement the ligatures exert pressure upward as well as backward, and in this particular my method is identical with that of Dr. Sachs.

Figure 7 shows the buccal aspect of the apparatus, with the ligature in position. Figure 8 shows the roof of the mouth, and the general shape of the various pieces cemented to the teeth.

RODRIGUES OTTOLENGUI.

M. L. RHEIN, M.D., D.D.S.
NEW YORK.

Office and Laboratory

Office and Laboratory of Dr. M. L. Rhein.

NEW YORK.

Dr. M. L. Rhein, whose portrait is published herewith, has probably given more thought to the construction and equipment of his dental office and laboratory than any other dentist in the metropolis. As a result, his place of business is unsurpassed, if equaled by any in New York. It is not improbable that a few have expended more money on elaborate appurtenances and luxurious furniture, but fine furniture, rich draperies and elegant embellishments form but a minor part of the necessities in the production of an ideal working place for a modern dentist.

Dr. Rhein, in constructing his offices, purchased a dwelling, No. 38 East Sixty-first Street, which he remodeled according to his own plans, building at the rear of the original building a two-story extension, in which are the operating rooms and the laboratory. Sixty-first Street extends approximately east and west, and the house is on the south side of the street.

On entering, one ascends a short flight of stone steps, and passes through the storm doors into the vestibule. The outer, or storm doors, are of handsomely finished oak frames, in which are set full length panels of beveled French plate glass, through which the elegant inner doors are readily seen. The storm doors are closed automatically, being supplied with a patent noiseless closing spring. The vestibule has walls and ceiling of quartered oak, and is paved with a mosaic tiled floor. The frames of the inner doors are also of oak, fitted with glass panels. These glass panels are themselves doors, being set in metal frames, and hinged so that they may be opened outwardly, to admit a draught of air in summer. Behind these glass panels there is an elaborate backing of iron grille work, showing a rich floral design. (Fig. 1.) In the center is a scroll for each door, one of which shows the house number, and the other the doctor's name. The letters are formed by being cut in the scrolls stencil fashion, and then backed with aluminum, that metal showing in strong contrast against the black iron. Above this doorway is a transom similarly dec-

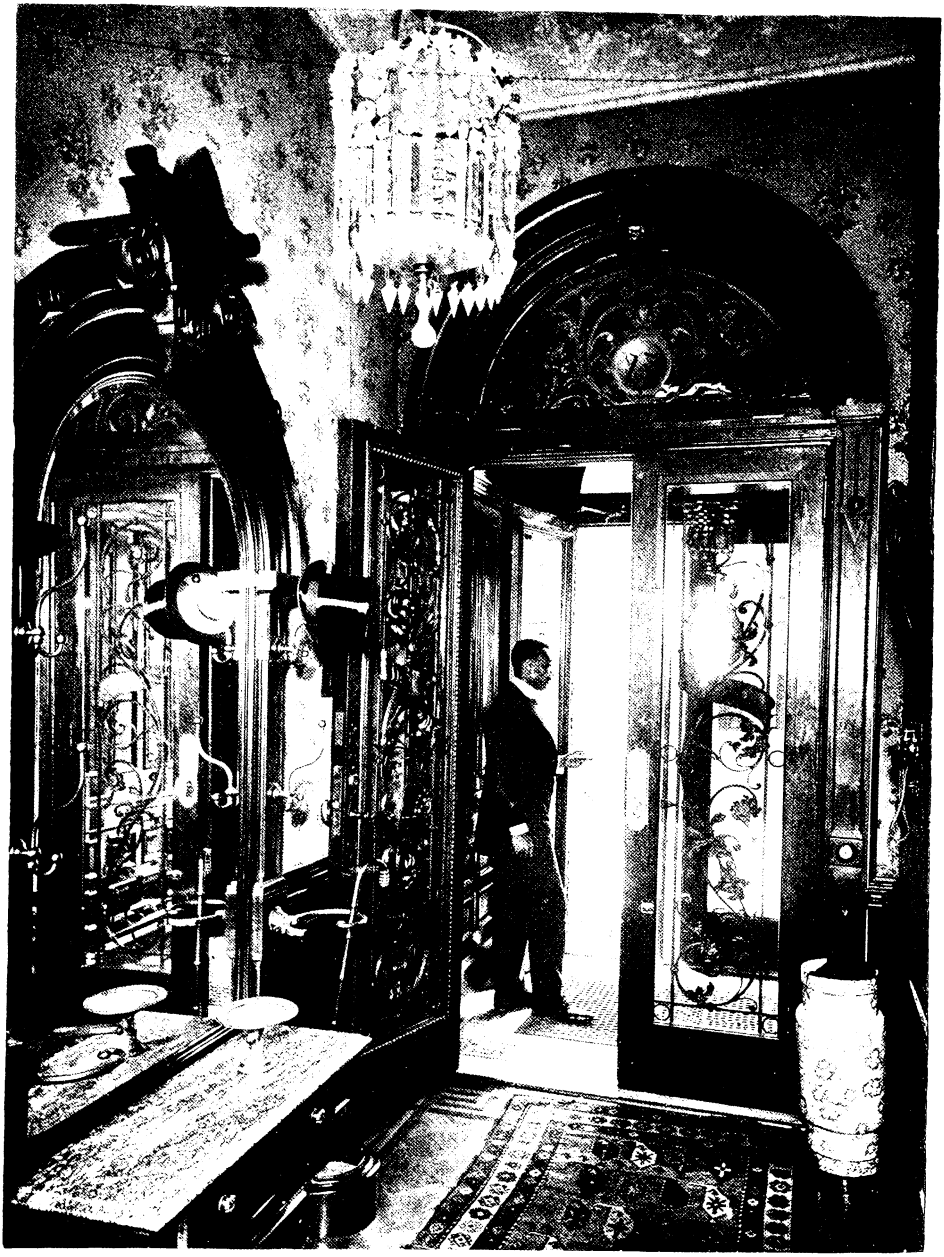


Fig. 1

orated in ornate iron grille work. In the center is a circular disk, in which is stenciled the house number, and here the open lettering is backed with opalescent glass, illuminated at night by an electric lamp. In the picture, at the right of the door, is seen a private telephone, which communicates with the offices and with the laboratory. There are also separate call bells, so that the gentlemanly Ethiopian who admits visitors may at once apprise the doctors, eighty-five feet in the rear, that one or the other is wanted. The circular spot of white, seen in the panel of the door, is a switch which may be set so that whenever the door is opened

Fig. 2.

the chandelier hanging in the hallway is lighted. This is a convenience when returning home late at night.

The wide hallway has a hard wood floor, which is covered with Oriental rugs, and leads back to the reception room, a cozy corner of which is shown in Fig 2. This room is spacious, handsomely papered and comfortably furnished with easy chairs, Turkish divans and rich draperies. The room is lighted in daytime by the window seen in the illustration, the sashes of which carry stained glass of an amber hue, so

that apparently a soft glow of sunlight streams in at all times. In the lower part of the book-case there is hidden a burglar-proof Marvin safe.

Passing from the reception room, one enters the extension, through a narrow hallway, on which opens the toilet room, and one of the operating rooms, the hallway finally terminating into the second and larger operating room in the rear. The toilet room is seen in Fig. 3. It immediately

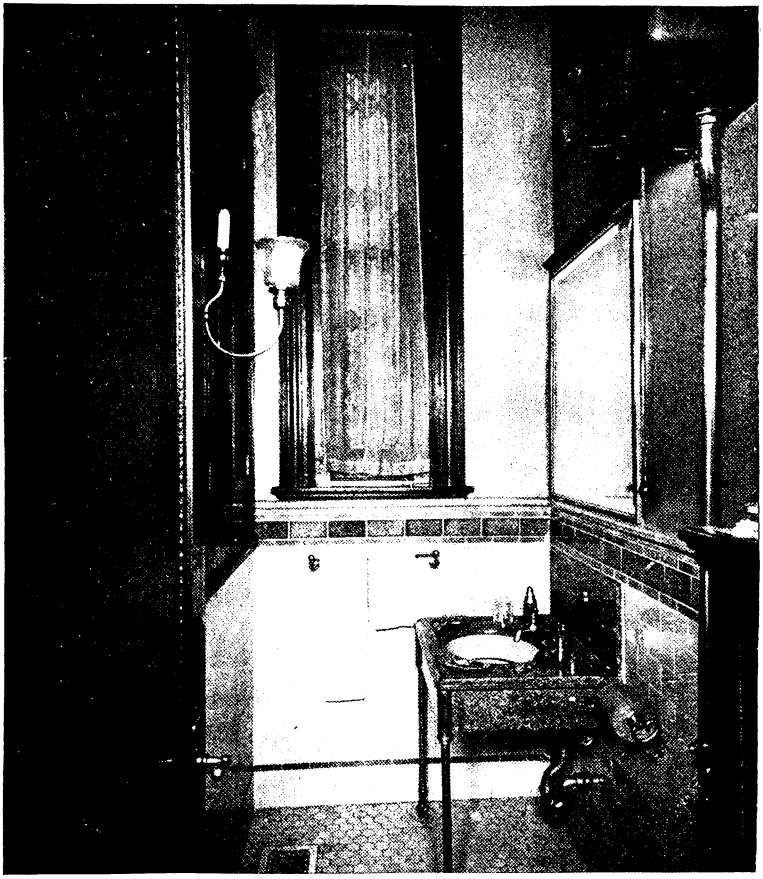


Fig. 3.

adjoins the waiting room, and is thus readily accessible to patients either before or after leaving the chair. This is a small apartment, lighted by electricity and thoroughly ventilated. The floor and lower part of the walls are of white tiles; the plumbing is of the latest pattern, exposed parts all nickel plated, the washstand being of handsomely polished granite. Set in the wall over the washstand is a large beveled plate mirror in

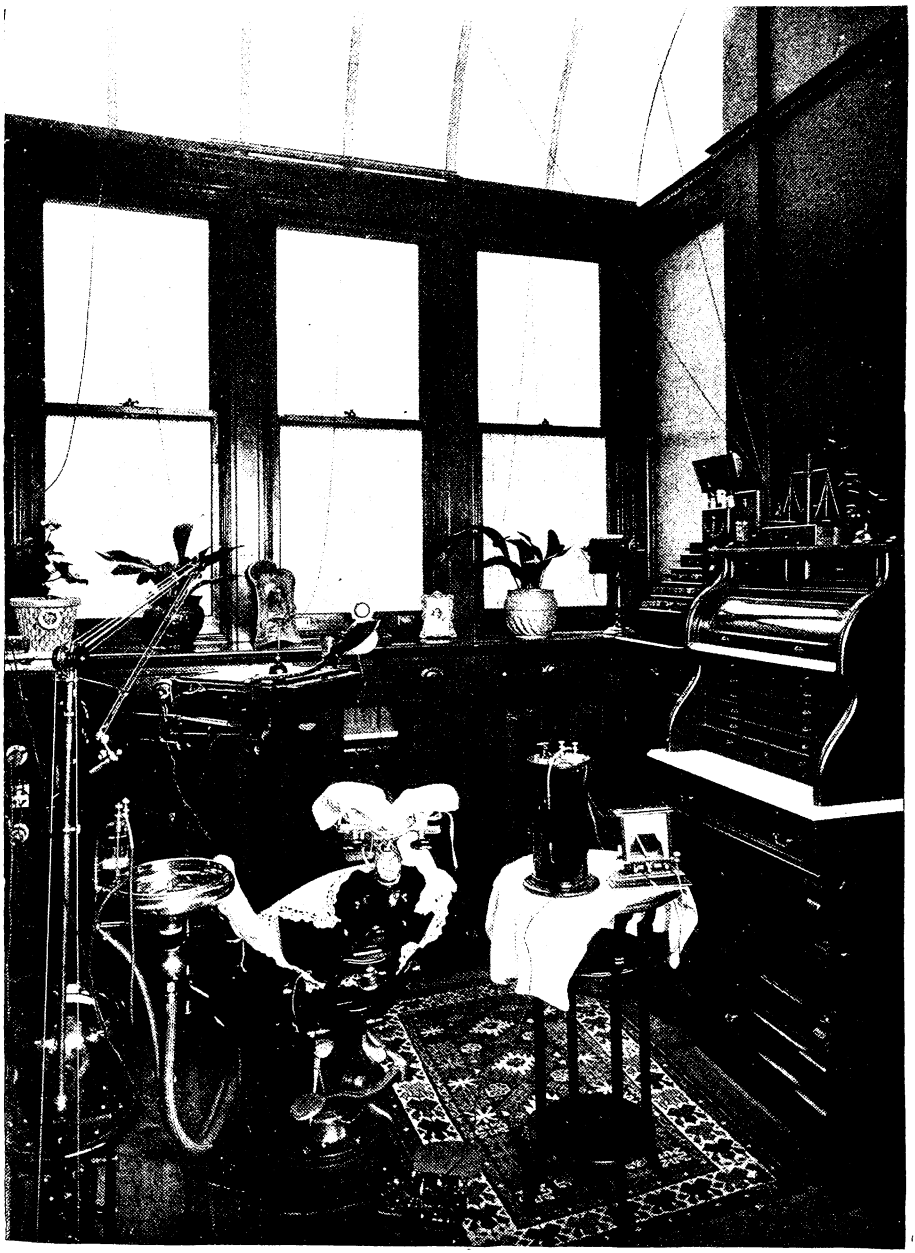


Fig. 4.

a nickel plated frame. The window is of stained glass to match the window in the waiting room. Back of the electric light bracket is a commodious closet, in which all the soiled linen from the offices is kept.

Immediately next to the toilet room is a stairway leading down to the laboratory, and the door next beyond opens into the office of Dr. C. L. Andrews, Dr. Rhein's partner. This room is the counterpart of Dr. Rhein's office, which is shown in Fig. 4.

The chief point of interest in connection with this ideal operating room is the method of lighting. The windows admit light from the northwest. In the perpendicular part of the wall are three windows, terminating above in a curved skylight which extends to a point immediately over the head-rest of the chair. In the corner, which is shown in the illustration, is seen a glass partition. This affords additional light to the adjacent office, and immediately opposite, in the corner of the room which is not seen, is a similar glass admitting light from without. The sashes and skylight are all fitted with half-inch corrugated glasses, which suffuse the light so that deep shadows are never cast, nor is there any glare from the afternoon sun. In the skylight there is no framework except the narrow metal strips which separate the several bent glasses. One of the central glasses in the skylight is arranged on hinges so that it may be opened, when requisite for ventilation. The roller curtains at the windows may be pulled down, while those for the skylight go upward.

Along the lower ledge on the outside of the skylight is a gutter, to lead off the water used when the glasses are washed from the upper story with a hose and long-handled curved brush. The sashes in the windows are arranged so that, besides running up and down, as is usual, they may be turned on central pivots. This is for convenience in washing, the arrangement permitting both sides of the glass to be washed from inside of the office.

The lower portion of the window frames is four and one-half feet above the floor, which is just about the level of the patient's head, when in the chair. Here is a wide window ledge, which serves as a repository for potted plants, pictures, etc.

Beneath the windows, at the back and in both corners, are paneled doors, which open into small closets, the whole, when closed, forming a handsome continuous wainscoting of antique oak, which matches the woodwork of the room. In one of these closets a switchboard connects with a storage battery in the cellar, which is used for operating the electro-magnetic mallet, mouth lamp, headlight, cauteries, etc. The other closets are useful for storing clean linen and supplies. Above the closets are drawers, which supplement the dental cabinet, affording additional

places for keeping instruments. On the window ledge in the corner is seen a wooden stand, arranged to hold five thousand sandpaper disks in assorted sizes. Just over this, and next to the dental cabinet, is a double lamp rheostat box, taking from six to twelve volts from the street current. This is also used for the electro-magnetic mallet. The present form of mallet supplied by the S. S. White Company for use with the engine transformer, does away with the interrupter, and converts the electric current into an alternating current, which is supposed to render the interrupter unnecessary. But this alters the quality of the blow, and is not so sat-

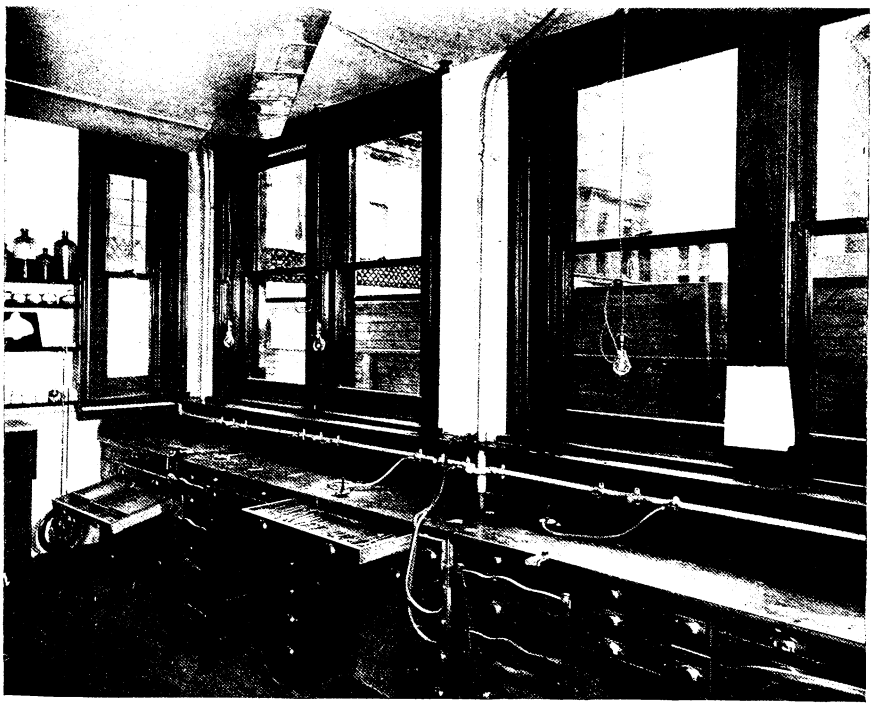


Fig. 5.

isfactory, in Dr. Rhein's opinion, as the original form of the mallet. His instrument, used either with the storage battery or with the rheostat, retains the interrupter.

In the same corner tubes enter the room from the cellar to supply compressed air. These compressed air tubes are operated by an automatic water pump. The compressed air is used in chip blower, and with various spraying attachments for medicating the diseased tissues of the mouth, and for douching the antrum. These powerful sprays play no small part in the doctor's marvelous cures of that troublesome disease,

pyorrhoea alveolaris. Patients who have been pronounced incurable by less painstaking dentists, seek his services and are cured through his skill and patience, coupled with a gentle touch which removes diseased tissues without causing additional difficulties by bruising or lacerating the parts. Whilst operating on pyorrhoea pockets, the compressed air spray is most serviceable in removing the loosened debris, controlling the flow of blood, and rendering the parts accessible and the more readily seen by somewhat opening the mouths of the pockets.

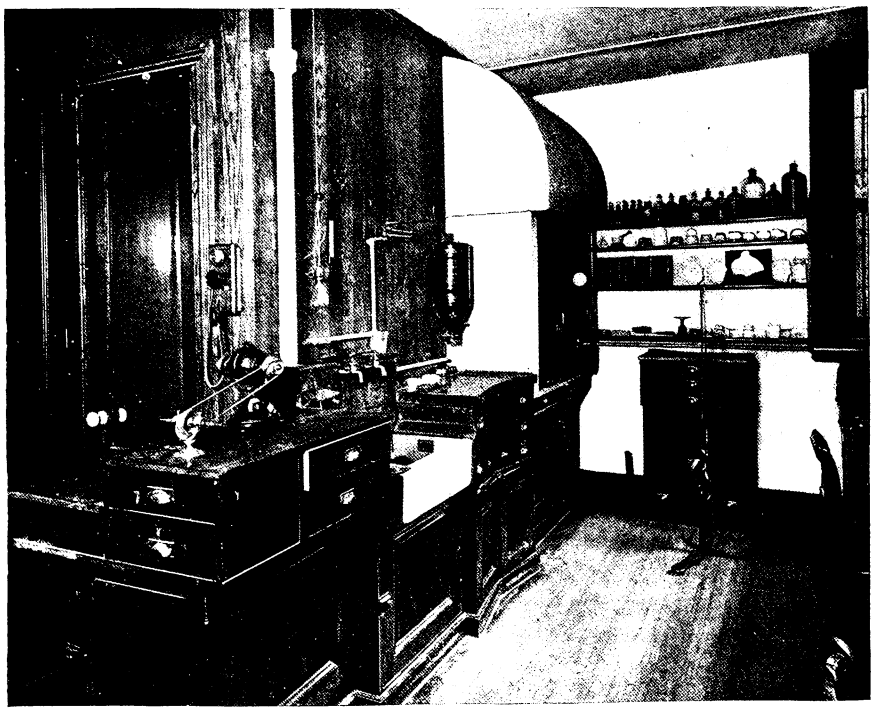


Fig. 6.

For drying out cavities hot air blasts are obtained by attaching the compressed air tube to an electric cautery point.

Just below the foot-piece of the chair a register in the floor admits hot air in winter for warming the room, while in two of the closets there are ventilators which communicate with the outer atmosphere and furnish a cool draft in summer. In these ventilated closets all malodorous medicaments are stored. There are also connections in the corner for either gas or electric heaters, should either become desirable.

At the extreme left of the illustration are seen two electric connections. One supplies the Doriot cord engine motor, which operates the

dental engine, while the other furnishes current for the Custer electric gold annealer, seen just in front of the basket-pot of flowers. Between the two is the switch. The swinging bracket is supplied with a flexible arm electric lamp, which can be screwed fast to the table and is useful on dark days. A lamp as powerful as desired may be attached to this arm.

On the portable table near the operating chair is seen the Wheeler volt selecter and milliamperemeter attached to one of five electric receptacles.

The water connections for the fountain spittoon are worthy of mention. One common objection to this style of spittoon is that sewer gas is emptied into the room through the pipes. Dr. Rhein has arranged his pipes so that they pass down into the cellar, emptying into a sink, and it is from this sink that the waste passes off into the sewer pipes. Thus there is no direct connection between the sewer and the office.

The walls of this model room are admirably arranged to afford comfortable relief to the eyes when the operator looks up from his work. They are covered with burlap, which is painted olive green. Thus, while there is abundance of light at one end of the room, there is always an agreeable shadiness at the other.

Along the wall where the instrument cabinet is seen, and between that piece of furniture and the door which leads to the hall, is a wash-basin like the one seen in the toilet-room, and here also is a handsome plate-glass mirror built into the wall, and surrounded by an oak frame.

Altogether there is a simplicity about the room that is imposing, while the comprehensiveness of the arrangements, affording facilities for the highest class of work, must be impressive to a patient, convincing him that the owner of the place is conscientiously endeavoring to render the most skillful service possible.

We may pass out of this office now, with a lingering and longing look backward, and, going again into the hall, step down a few stairs and find ourselves in a laboratory, which is in every way the peer of the operating rooms above.

This laboratory was planned by Dr. Andrews, who manages the prosthetic department. A view of the work bench is seen in Fig. 5, and here again we find abundance of light, admitted from four large windows in the main wall and one small one at the corner.

The large pipe in the center is the compressed air tube, and here is used to furnish the blast to the blow pipe, with which it is connected by a rubber tubing, a second similar tubing being attached to the gas pipe, which extends along the work bench. There is accommodation for four laboratory men, and each place is amply supplied with drawers. These

are admirably arranged with series of sliding trays which run in grooves, as may be seen in one drawer, near the further end of the bench. The various drawers have different arrangements of trays, according to the uses to which they are meant to be adapted.

The rear end and opposite side of the laboratory is shown in Fig. 6. Along the rear wall we see bottles and models in orderly arrangement on shelves. The cabinet below holds moulding materials. The lower compartment of the cabinet is a large drawer, in which the heavy metals are kept; therefore it is set on rollers, and thus is easily drawn out and shoved back.

In the corner is a hooded chimney, lined throughout with zinc, in which vulcanizing, acid boiling and all odorous or fume generating work is performed, the noxious gases passing off through a flue which leads to the top of the house, forty or more feet above the roof of the offices overhead.

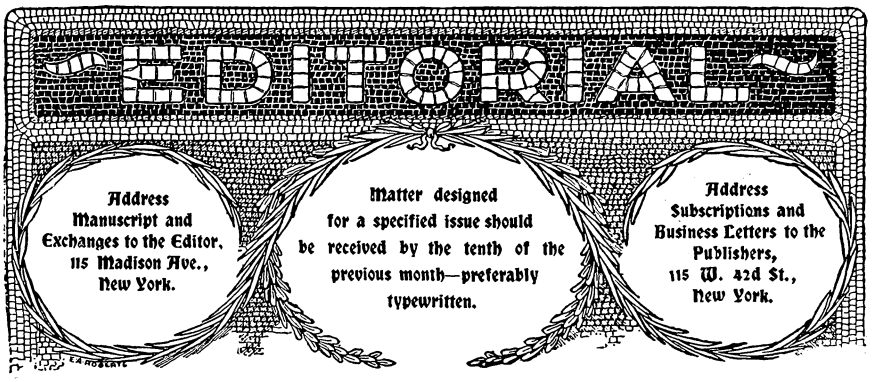
Next to the chimney is the plaster bench, covered with heavy plate-glass, having a hole in the center through which the debris may be brushed into the waste box, concealed in the closet below. At the side are small drawers, in which are kept impression trays, plaster cups, knives, etc. In the corner over the plaster bench is seen a plaster sifter.

Next is the water tank, made of slate, the bottom of which is protected by being covered with a perforated board, which can be easily lifted out. This not only prevents breakage, through the carelessness of attendants, who might accidentally drop heavy articles upon the slate bottom, but also saves clogging of the pipes from scraps of plaster, or from soft plaster poured out with surplus water from the plaster cups, such debris collecting on the board and being removed with it.

Finally we have the polishing lathe, run by a Londell motor, and over this bench on the wall is seen the mouthpiece of the telephone, which connects with the street door and offices.

The floor is of hard wood waxed, and kept as clean as wax, though stray lumps of wax are not permitted to be ground into the boards with the heels.

I believe that, inadequate as this description is, the reader will admit that here we have an ideal office and laboratory, in every way meeting the needs of the most fastidious dentist who may chance to live in these fastidious times.



Reply to the Resolutions Adopted by the American Academy of Dental Science, and by the Connecticut State Dental Association.

The American Academy of Dental Science and the Connecticut State Dental Association have passed resolutions condemnatory of certain advertisements which have recently appeared in dental magazines. These resolutions are published in this issue, in the department devoted to Society Announcements. The advertisements designated as objectionable are those of "advertisement writers," and of "secret local anaesthetics," so-called "nostrums." Advertisements of this character have been accepted and published in our pages; therefore an explanation of our position is pertinent.

When we acquired possession of ITEMS OF INTEREST and moved the publication office to New York City, it became necessary to register the magazine at the New York Post Office. Application was made to the postal authorities for such registration and the right of mailing as second class matter, without which privilege it would be manifestly impossible to issue the magazine at one dollar per year, if at all.

In response to our application an agent from the post office called with a blank form, including a number of questions, to be answered under oath. One of these, question No. 10, reads as follows: "Can any house in good standing advertise in your publication at the regular published rates?"

The postal agent explained to us that if this query were answered in the negative the right to use the mails at second class rates would be denied to us. The question was answered affirmatively, and our signature appended under oath. This document being satisfactory to the postal authorities the magazine was entered as second class matter.

Immediately after the appearance of the January number, our editor, Dr. Ottolengui, complained of the advertisements, which have since been made the subject of adverse criticism. He urged that such advertisements should not be accepted. In reply we showed him the sworn statement filed with the post office, and explained that we had no right to refuse advertisements, reputable in character, from a *legal* standpoint, however objectionable they might appear from the *ethical.* We further pointed out to him that our advertising pages were being conducted in the strictest accord with our oath, and that some of our most bitter competitors in business were making free use of the privilege. Moreover, we reminded Dr. Ottolengui that as he had no connection whatever with the advertising pages or business management of the magazine, no one with any justice could hold him responsible for any of the advertisements that might seem to be the opposite of ethical. At the same time, we once more assured him that we would live up to the letter of our contract with him, in which he is guaranteed the right to manage the scientific portion of the magazine in accordance with his own judgment, without hindrance or restriction.

Recently our attention was called to the resolutions adopted by the American Academy of Dental Science, and we were considerably surprised to find that the editorial function had been confounded with the managerial, and that our editor was held responsible and censured for that over which he could have no control. This was the more regrettable because, with our interpretation of the postal laws, we could see no way of altering our policy without danger to our status in the post office.

More recently certain dental journals have assumed the right to restrict the use of their advertising pages, and have announced such intention. As this, however, may be an assumption not based on legal rights, we have felt it safer to obtain a catechetical opinion from the postal authorities on this point. To this end a specific statement of the case has been prepared, citing the fact that in living up to our oath, by

keeping our advertising pages open to all, we have apparently innocently offended a portion of our patrons, and asking for a specific ruling as to our liberty in excluding such advertisements from our pages.

Should the postal authorities make reply, authorizing such restriction, in future we shall accept no advertisements of the nature to which exception has been taken, and our business manager will be instructed not to renew those which are running under contract, when the time for which the contracts have been made shall have expired.

J. F. FRANTZ,
Pres. Consolidated Dental Manufacturing Co.

Dentists' Advertisements and Anaesthetic Nostrums.

The advertising dentist is abroad in the land, and, indeed, has made himself conspicuous in public places for some time. Recently another man of shrewd commercial instinct has scented the game which may be lured into the net, and he offers to help bait the trap for a reasonable recompense for his expenditure of brains. The writer of dental advertisements offers his services for hire. The more ethical in the profession "view with dismay" this new phase of affairs. An analysis of the present situation will be interesting and some instructive deductions may obtain.

The Charlatan and the Quack.

Time was when we had no State laws regulating the practice of dentistry. In those days the quack was an illegitimate practitioner, skulking along the by-ways, and by artful devices luring the unfortunate or the unwitting into his place of business. The medical charlatan, by the mysterious potency of Oriental herbs, promised cure for cancer after the regular physician had abandoned the case as hopeless. The despairing sufferer took the one chance for life, paid the fee, swallowed the bitters, and awaited death, the charlatan claiming credit for the delay while the scythe carrier lingered. The quack doctor guaranteed the removal of tape worms, exhibiting wood-snakes in alcohol as evidence of his skill. Or he stood by the wayside dispensing pills which cured rheumatism, and, especially among the poor negroes of the South,

if the pill was a powerful purgative, the patient found virtue in the remedy.

The quack dentist appeared in a carriage, drawn by four horses, with a crown on his head and a band of music. He extracted teeth gratis and sold tooth powders, which whitened the teeth instantly, as he proved to the satisfaction of the gaping onlookers. He whispered into the ear of his patient, just before extraction, "You have a few teeth that need filling; come to my office to-morrow."

These men were the quacks before we had laws. They were easily recognizable. The discriminating members of the community avoided them, entrusting themselves to the regular practitioner.

All this is changed. The king of dentists, with his tinsel crown, his ill-fed horses and his magic tooth powder has passed away. The show-case in the street, with the life-like wax figures, whose mouths opened and shut, displaying gems of dental art, is observed with lessening frequency.

Such things can be no more. We have laws now! Laws which declare that none but legally qualified practitioners shall have license to practice, and defining what shall be considered legal qualifications. The dental king, were he to ride by to-day, would be discovered by the Law Committee of our State Society and promptly thrust into prison.

In place of these, we have the advertising dentists in rapidly increasing numbers. Apparently the more stringent our laws, the more dental parlors spring into existence.* Why? *Because, as the community is taught to believe that none but legally qualified men may practice dentistry, the more readily may patrons be attracted by advertising methods.*

But how is it that such men, with such methods, are legal practitioners? The answer is obvious. The law of the land does not recognize the laws of ethics, but accords all men the privilege of conducting their individual businesses in accordance with their individual preferences.

Dental parlors are not always controlled by dentists. Not a few of them are owned by unprofessional men, who hire dentists to work for them. Since these dental assistants must conform to the legal requirements, it follows that they must be graduates of colleges and it is a lamentable fact that graduates from our best colleges are working in these dental shops. If the colleges cannot so educate their students that upon

* Sixty-four more dental shops have been opened in New York City, since January 1st, 1897.

leaving college they are so imbued with professional spirit that it would be impossible to hire them to work in an unprofessional environment, then it is idle to pass resolutions against one phase of the evil. When dental graduates cease to advertise, or work for those who advertise, the writer of advertisements will offer his brains in other directions.

The Use of Anaesthetic Nostrums.

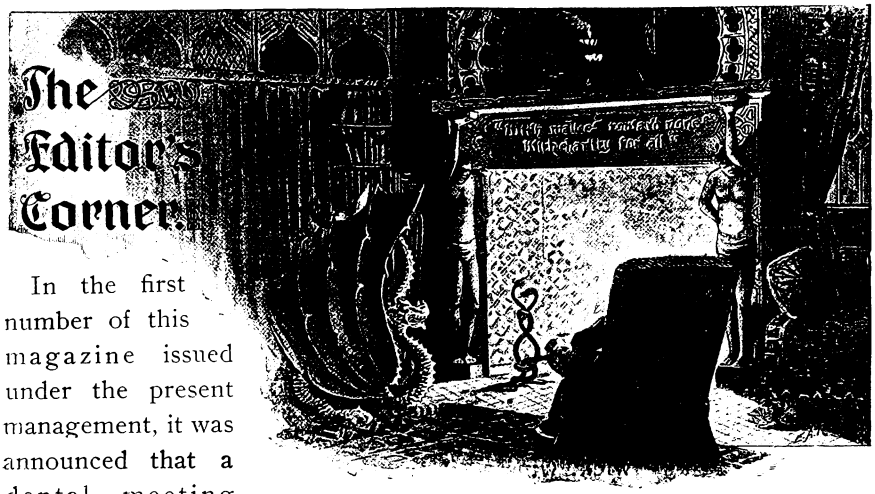
Another source of complaint is the local anaesthetic, which is guaranteed to deaden all pain, but which cannot possibly "deaden" (or make dead) the patient. These marvelous concoctions have attractive labels, which announce a long list of drugs which the combinations do *not* contain, but which seldom enumerate the real constituents of the preparation. Probably, if all formulas were known, half would be found to contain deadly drugs, while the others include nothing much more powerful or effectual than peppermint, which, by the way, has sedative properties.

It is almost within easy memory when the first of these nostrums was offered to the profession. Since then the successful sale of such preparations has attracted many other aspirants for easily acquired wealth, until at present their name is legion, or rather their names usually are some combination of letters producing words as obnoxious in sound as they are impossible, etymologically considered.

And now, at last, objection is made to the advertisement of such nostrums. Why?

Once more, analysis furnishes food for serious reflection. *It is a dolorous fact that the men who advertise local anaesthetics receive more replies than the men who advertise any other articles for dental use.* Does not this prove that they are largely used? And if so, is not the disgrace attributable to the profession, rather than to the men offering their wares for sale? In reply it might be argued that men who use nostrums are not ethical. This contention is true, but it is also a fact that among the purchasers of anaesthetic nostrums there are hundreds of men who are members in good standing in societies whose constitutions include the code of ethics. Investigating committees might discover who these men are, and if they should all be expelled from society membership, there would probably be a noticeable decrease in the attendance at subsequent meetings.

The medical and dental professions contend, with justice and with righteous consideration for patients, that no practitioner should use a drug, or combination of drugs, the physical properties of which are unknown to him. This is apparently predicated more in the interest of the patient than of the practitioner, and such being so, it might not be unwise to appeal to State Legislatures for laws requiring the printing of the correct formulas upon all packages of proprietary remedies. Moreover, it should be made a misdemeanor for any physician or dentist to prescribe or use any remedy the ingredients of which and their proportions are not fully known to him.



In the first number of this magazine issued under the present management, it was announced that a dental meeting would be held under the auspices of ITEMS OF INTEREST. The final arrangements for this meeting have been completed. All that is now required is that the dentists should set apart the week of July 26th, and bring their wives and sweethearts to the Twin Mountain House for a royal good time, with some science thrown in.

The Winners of the Prize Medals.

A literary contest was also inaugurated, and five medals were offered as prizes; one of gold, one of silver, and three of bronze. A large number of manuscripts were received in the competition, and the best have been chosen by the judges, the result being announced on the next page. We have concluded to make the first and second prizes both of gold, and the three others of silver, thus doing a little better than our promise. Our sincere thanks are herewith tendered to Drs. Taft, Andrews and Gorgas for their services as judges, their names having undoubtedly satisfied all that the awards would be made justly and without bias or favor. Each of these gentlemen examined the papers separately, and they reached practically the same results.

In addition to the announcements which have been made from time to time in the pages of the magazine, twenty-five thousand special invitations have been mailed to the dentists of the country. Thus all have been invited, and from the scores of letters of inquiry which have been received, it is a natural inference that the meeting will be largely attended.

On the next page will be found our programme, though not in the order in which the papers will be read.

Programme of our Mountain Meeting.

Dr. C. Bunting Colson. Dr. C. Bunting Colson, of Charleston, South Carolina, wins the first prize, gold medal, his essay being entitled, "A Successful Method of Filling Fast Decaying Teeth of the Young Anaemic." It will be remembered that Dr. Colson won the first prize in the literary contest recently held by the Palisade Manufacturing Co.

Dr. Allison R. Lawshe. Dr. Allison R. Lawshe, of Trenton, New Jersey, wins the second prize, gold medal, his essay being entitled, "A System of Removable Bridge Substitution, with Sound Abutting Teeth."

Dr. James M. Magee. Dr. James M. Magee, of St. John, New Brunswick, wins a silver medal, his essay being entitled, "A Perfect Filling for the Posterior Teeth."

Dr. Will A. Pressley. Dr. Will A. Pressley, of Rock Hill, South Carolina, wins a silver medal, his essay being entitled, "Prophylaxis."

Dr. E. J. Townsend. Dr. E. J. Townsend, of Los Angeles, California, wins a silver medal, his essay being entitled, "Pinless Teeth for Bridge Work."

In addition to the prize essays, the following papers of unusual interest will be read by their distinguished authors, who have kindly consented to be with us.

Dr. F. C. Van Woert, of Brooklyn, will read a paper, entitled "Electricity in Dental Practice." The doctor will illustrate his paper with lantern slides, and will have with him a complete outfit with which to make practical demonstration of X-ray photography—taking, developing, and printing pictures during the meeting.

Dr. Wm. Jas. Morton, of New York, will give a lecture on the subject of "Cataphoresis and the X-ray," illustrated by one hundred and fifty lantern slides.

Dr. M. L. Rhein, of New York, will read a paper entitled, "Cure of Acute and Chronic Alveolar Abscess."

Dr. J. Allan Osmun, of Newark, N. J., will read a paper entitled, "Fallacies Observed in Dental Practice."

Dr. Carl Theodor Gramm, of Chicago, will read a paper entitled, "Studies of Chronic Arsenical Poisoning," illustrated with lantern slides.

Banquet. Parlor Car. Hotel Rates.

On the last day of the meeting a complimentary banquet will be tendered to our guests and their lady friends, and we would, therefore, request an early response, that we may estimate the number to be served.

For the comfort of those having tickets from New York City, we have also arranged for special parlor car accommodations on the train leaving Grand Central depot, New York City, Saturday morning, July 24th, at nine o'clock. To all who will join our party on this train, either at New York or *en route*, parlor-car seats will be furnished with our compliments.

The excursion rates to Twin Mountain, this year, are the same as the usual convention rates; consequently, no special railroad rate could be obtained. From New York City to Twin Mountain and return the fare is $15.50.

All who start from Boston may take the train leaving Monday morning, July 26th, between nine and ten o'clock. The fare for the round trip, from Boston to Twin Mountain, via Crawford Notch, and return to Boston, is $8.40. If all who desire to go will notify Mr. F. D. Howe, at our Boston depot, 181 Tremont St., he will arrange so that all may go in one party, and thus have an enjoyable social trip up.

The regular rates at the Twin Mountain Hotel are four to five dollars per day, and the accommodation and table service are in keeping with these prices. The following rates, therefore, are a great concession and afford a rare opportunity to visit this charming region. To all who attend our meeting, including ladies, the rate will be as follows. For one person, in separate room, three dollars per day; two persons in one room, five dollars per day. To all who engage for the full week regardless of how many room together, two dollars per day each. These rates will be good to end of the meeting, and the rate by the week will be accepted from July 1st, where persons desire to spend one or two weeks at the house prior to the meeting.

Crowning Deciduous Teeth.

By Dr. Trim Houston, Corsicana, Texas.

Having noticed in Items of Interest for January Dr. Poulson's experience with crowns on deciduous teeth, I record the following as being possibly of interest: About six months ago a child, aged two years and three months, was brought into my office. I found the upper centrals badly decayed on the labial surfaces, along the cervical border. There was also semilunar decay on the cutting edges, reaching almost to the pulps. When eating anything sweet or drinking hot or cold liquids, great pain was occasioned. I suggested crowning. The mother objected, saying that so much gold in the child's mouth would be unsightly, but I finally converted her to my views.

I used pure gold 39g. By using such thin plate the size of the teeth was increased very little, and the gold, being unalloyed, I was enabled to burnish the edges close up around the necks of the teeth after cementing them on with oxyphosphate.

The crowns have been in position for six months, and the child has had perfect comfort.

Retained Lateral Incisors.

By Thos. P. Williams, D.D.S., Houston, Texas.

About ten days ago, a young lady, fifteen years of age, presented herself, never before having consulted a dentist. Upon examination I found that she still retained her temporary superior lateral incisors. On the right side the cuspid is fully erupted, and the lateral is quite firm. On the left side the cuspid is just peeping through the gum, and seems to press considerably on the lateral, which is quite loose—so loose that it could not be filled with gold. Nevertheless, there seemed very little absorption of the root. There are no signs whatever of the permanent teeth;

no fullness either on the labial or palatal aspect. This being the case, I have hesitated to extract the laterals, fearing the non-eruption of permanent incisors. I anticipate that after the left cuspid has become fully erupted the lateral on that side will tighten.

With an experience of sixteen years, these teeth are in the mouth later in life than any laterals I have ever seen. I have many times seen temporary cuspids and molars retained until late in life. This young lady is well grown and developed; all the rest of her teeth being of good shape and in place, with the exception, of course, of the wisdom teeth.

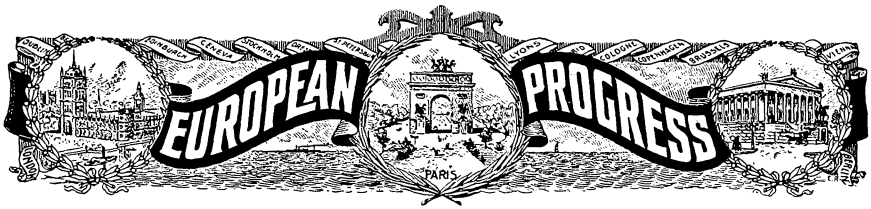
Retained Temporary Teeth.

By D. W. Barker, D.D.S., Brooklyn, N. Y.

The case of Dr. Kells's, which occupies the Orthodontia department in the current Items, is interesting to me because of a case of that kind in my own practice.

The patient is a young lady, about nineteen years of age, presenting with the four second premolars still in place. They were not decayed nor loose, and I had no intention of disturbing them. But in extracting the roots of a lower first molar the premolar was accidentally caught in the jaws of the forceps and dislodged, somewhat to my dismay. On examination, I found the bicuspid lying directly below, with its crown between the roots of the premolar (when in its place). It was a question whether the other three would not be found similarly situated. I thought they would, and on extracting the remaining three premolars the bicuspids were, in every case, found to be in their proper places. The roots of the premolars were not absorbed at all, and required some force to remove them. Neither was there any fullness of the process that would indicate the presence of the permanent teeth—at least, none that would be much of a guide. The only thing that I could notice that might indicate their presence was a slight prominence of the premolars.

I have regretted that I did not obtain a cast of the teeth, but I did not realize the importance of it until I had unintentionally extracted one of them. I have since seen the lady, and the bicuspids came into place nicely.



The New Antiseptics of Dr. Credé: Silver and the Silver Salts, and Their Use in Dentistry.

By M. Hille, Dentist, Dresden.

(*Read Before the Dental Association of the Kingdom of Saxony, October 24, 1896. Abstracted from the Deutsche Monatsschrift fur Zahnheilkunde, May, 1897.*)

Though modern surgery has turned from antisepsis to asepsis, the former is by no means superfluous. Asepsis cannot be obtained in many conditions in which the external circumstances are such that microbic infection cannot be prevented, or where it has already occurred. Moreover, antisepsis often gives us quicker and better results than does asepsis.

Especially is this the case in the mouth, the field of our special labors, which is a perfect culture oven of exogenous and endogenous micro-organisms, and where aseptic procedures are entirely inapplicable. We dentists are compelled to rely on antiseptics, and if I propose a new one to you and recommend it most warmly, it is because of the good results that I have obtained with it in various departments of our specialty.

Requisites of an Ideal Antiseptic.

The ideal antiseptic must possess the following properties: It must be harmless, non-poisonous and non-irritating; it must be fatal to all pathogenic spores and microbes; it must have no deleterious or destructive effect upon the tissues; it must be in a form that renders its application possible in the most difficult localities; and, finally, it should be sufficiently far-reaching in its effects to penetrate the deeper tissues, and destroy the germs that may have penetrated to them. None of our previous antiseptics fulfills these conditions. Credé believes that two new ones, the citrate of silver and the lactate of silver, really do so, and his conclusions are confirmed by those of Halsted, Beyer and others. His bacteriological and clinical experimentation in the Carola Hospital, of Dresden, have given most surprisingly good results.

Antiseptic Properties of Metals.

We dentists are well aware of the fact that the precious metals, in proper form, hinder the growth of the schizomycetes; that gold fillings are more resistant and more durable than others. I, with Miller, ascribe it in part, at least, to this fact, though something may be due to the greater care with which fillings of the precious metals are made. Gold plates are better tolerated by the oral mucous membrane than those made of hard rubber. It seems to be proven that various metals, more especially mercury, silver and gold, have antiseptic properties, whilst zinc, lead and iron seem to be quite powerless in this regard.

The laboratory experiments and clinical researches of Credé and Beyer were so entirely satisfactory that I resolved to try the new antiseptics in dental work. In the sterilization of root sinuses I thought that they would be especially useful. My experiments were made upon teeth with freshly killed pulps, as well as upon those in which the pulps had become gangrenous, and include about one hundred cases. I may state at once that my hopes were not disappointed. The results that I have obtained during the last half year have been entirely satisfactory to me, and I can recommend these preparations to my colleagues in the very warmest manner.

I directed all the patients that I treated with the silver salts to return to me at once, as soon as any pain occurred in the teeth that had been treated. Up to the time of this present writing only three have reappeared with pericementitis, and in two out of these three the defects in the molars were distal and difficult of access.

Method of Treatment with Silver Salts.

My method of root treatment is the following: I open the pulp cavity with a suitable trephine, and if the pulp is gangrenous, clean it out as thoroughly as possible with a thin probe. Then I thoroughly and repeatedly inject the root canal with a freshly prepared and dilute solution (1:2,000) of the lactate of silver. Then I apply the rubber dam, dry the cavity thoroughly with cotton and finally thoroughly with the hot air apparatus, to the thoroughness of which procedure I attach the greatest weight. For I believe that even if dead pulp tissue remains behind further decomposition and the development of the gases of putrefaction cannot so readily occur if all moisture is completely removed and the mummification of whatever tissue is left behind can be effected. Here the powdered citrate of silver is of especial value, since it not only permanently disinfects the decomposing products that remain, but acts as a desiccant also in consequence of its powdered

form. As is well known, the difficulty in the sterilization of the root canals depends largely on the difficulty of thoroughly introducing the antiseptic. I believe that it is best done by applying the powdered citrate through an insufflator, to the nozzle of which a rubber tube with a very small orifice is attached; this permits the application to be made to all the sinuosities of even the distal canal.

The pulverization is fairly complete, and if the opening of the canal is sufficiently large, I do not doubt that the particles of the drug reach the very ends of the sinuses. If the insufflator does not seem to have effected this I apply the powdered citrate to the depths of the canal on a thin probe.

In cases of recently killed pulps, I usually fill at one sitting, simply dusting in the citrate after opening the cavity with a sterilized bur, and filling with tin or gutta percha in the usual manner. When the root canals are putrid, I deem it necessary to make two to three applications and insufflations of the citrate of the lactate, before proceeding to the permanent filling. It is surprising to see in most cases that after the first introduction of the silver salt, the odor of decomposition entirely disappears. I have seen no discoloration of the teeth in the cases that have returned to me; it is true, however, that they were all molars. Only the cavities were colored black. Irritation after the applications was never noted.

I do not claim that this method of the treatment of roots is the only proper one, for there are almost as many different methods as there are practitioners of dentistry. But with these antiseptics I have formulated a reliable and effective method system of treatment.

In conclusion, let me state that I have used the silver preparations in various other diseases. I have used the gray silver gauze in one case of empyema of the antrum of Highmore, and as a tampon for hemorrhage following extractions, and also the dilute solutions as gargles in stomatitis, and I have obtained satisfactory results with them.

The comparatively small number of cases over which my experience extends are insufficient to base a final judgment on. But the good results certainly enable me to recommend that these silver salts be extensively experimented with and tried by others, and I should be glad to stimulate those of my colleagues who have not yet used these antiseptics, to do so.

The Direct and Indirect Causes of Dental Decay.

Reported by GEORGE RANDORF, Berlin.

The direct and indirect causes of dental decay have been made the subject of an exhaustive inquiry by Dr. Roese, of Munich. He has found, in the course of his researches, that dental decay is distinctly connected with the shape of the head. He visited two rural districts in Bavaria and the villages surrounding Munich, and examined 4,700 recruits. All the teeth examined, those perfect and those decayed, were counted together in order to ascertain the percentage of diseased teeth. The recruits examined averaged from twenty to twenty-two years of age.

His observations have conclusively proved that the shape of the face is in direct relation with dental decay. The color of the teeth is also an important factor. He found four distinct colors: yellow, whitish yellow, pearl gray, and blue gray. These blue gray teeth were only twice met with, and in persons inhabiting a country extremely poor in lime.

There were cases where the decay had been arrested. This he attributes to the use of the coarse black bread, whilst at Rosenheim he met with fine-looking teeth which were in reality terribly decayed, and in these villages the bread eaten was white.

Mr. Wellner, of Trauenfeld, has also studied this subject in Switzerland, and found the greatest percentage of decay where white, fine bread was eaten. Formerly, when hard, black bread alone was eaten, the teeth were much sounder.

At Fresing, in every hundred there were sixteen decayed teeth; in long faces twenty and eight-tenths per cent.; in medium-sized faces, nineteen and five-tenths per cent.; in broad faces, thirteen and three-tenths per cent.; therefore the difference between long and broad faces was seven and five-tenths per cent. The agricultural population in the suburbs of Munich showed: In long faces, twenty-six and two-tenths per cent.; in medium-sized faces, twenty and five-tenths per cent.; in broad faces, seventeen and five-tenths per cent.; difference, eight and seven-tenths per cent.

Why are long faces more disposed to decay? Because, in a narrow face, the teeth are more closely set together. Often they are irregular or encroach one upon the other for want of space. The remains of food rest upon them, which causes a rapid decay of the teeth; further, the narrower a face is, the greater the masticatory strength is developed, and persons endowed with good powers of mastication are protected against dental decay.

At Viechtach, where the bread is very hard, the long faces did not show more decay than the broad. Where the greatest difference is found is where fine bread is eaten.

In regard to color, yellow teeth are of better quality than whitish. There is no doubt that the quality of the daily bread is a great factor in the destruction or preservation of the teeth. Heredity also plays an important role, but the information on this point is still incomplete.

Dr. Telschow's New Cement.

Abstract from "Odontologie," by GEORGE RANDORF, Berlin, Germany.

In describing his new cement, Dr. Telschow, of Berlin, writes as follows: I have employed aluminum in my practice during many years, and the observations made by me during this time have suggested the preparation of a new filling material in which I have incorporated silicated aluminum and fluorhydric acid. This cement resists the acids in the mouth to an extraordinary degree, and in appearance, exactly resembles the natural enamel of the teeth.

I may add that fluorhydric acid has a beneficial effect upon the roots of the teeth, and immediately allays the inflammation of pericementitis. It is introduced into the cavity dry. For the preparation of fluorid you require a glass of liquid (a), a glass of powder (b), and a bottle of gutta percha and of fluorhydric acid (c), with which the liquid is mixed with one-third of the acid. Great care must be exercised, as the acid is a strong corrosive. The hand which holds the glass must be covered with a glove, and the acid should be added drop by drop. Should any of the acid fall on the hands they should instantly be washed with soap. The bottle must be well shaken and the powder is then added.

The cavity to be filled must be well dried with bibulous paper and then with hot air. The filling is introduced soft and gradually hardens. It is necessary to shake the liquid each time before using it. A large quantity should never be prepared as it decomposes after eight days. The filling is polished on the day after insertion, and then has a smooth, brilliant surface, indistinguishable from natural enamel.

The liquid (a) is phosphoric acid.

The powder (b) is a composition of oxide of zinc and aluminum salts.

The bottle (c) fluorhydric acid.

Mutilation of the Teeth Amongst Savage Tribes.

By George Randorf, Berlin, Germany.

Dr. Hess, speaking on this subject, at the National Dental Congress, of Nancy, said:

One day, whilst working in the Museum, one of the caretakers remarked to me, as some foreigners passed by, "What wealth these Americans must possess! They stuff themselves with gold to the very teeth, and when they open their mouths one sees a gold mine." This good man, in his ignorance of dental surgery, only saw in the gold inserted in the teeth an arrogant spirit of boasting.

Among all savage races the idea of enhancing beauty through changing the normal form of the teeth exists. In the negro the most striking point in the dark face is naturally the contrast between the whiteness in the eye and tooth and the skin.

Teeth Extracted for Beauty's Sake.

The embellishment of the eye is a delicate task; for this purpose paints and pomades are used, which intensify the blackness of eyelid and eyelash. The teeth are much more easily manipulated; there are, for instance, the two large upper incisors, which offer ample opportunity to decorators. On the northern part of the river Congo other tribes, anxious not to be outdone by their neighbors, go further and extract these two upper incisors as well as the lower corresponding ones.

The number three is held in honor among the ancients as well as the primitive races, and we find other tribes, where three teeth are pulled at one time. An iron nail is inserted between the tooth and the jaw bone; a stroke of the hammer is directed upon this nail and the tooth falls out.

Very often a portion of the jaw bone comes with it, and there are also cases where the bone is very resistant and the root remains in the alveolus. It is a barbarous, brutal operation, and causes intense suffering, but the young dandies who undergo it never utter a word of complaint. They know they will be made beautiful thereby!

Travelers frequently question the natives to ascertain the object of this mutilation. The answer once received was very characteristic. "You ask wherefore we extract these teeth? You cannot guess why? In order to enjoy the kiss better!" Before such an explanation, one can but be dumb. Who would have thought to find such subtlety in the love-making of a people living in huts formed of leaves, half naked?

The Shape of the Teeth Altered.

Near the cataracts of the Congo we came upon other tribes who did not practice this extraction. The "doctors" of the native villages declared that as the teeth were a gift of God, it would be displeasing to Him to extract them, but they permit themselves to modify them; they alter the normal shape, cutting away the interior portion of the two incisors. This is considered extremely elegant, and the operators are regarded as great artists. It is an exceedingly tiresome operation, and requires much skill, and much patience on the part of the patient. The teeth are scraped with an iron bladed knife of the most primitive form, until the desired shape is attained. Intense pain follows, and to allay this the young, savage warriors chew and suck powdered tobacco. They put a pinch of it on the tongue. This is formed by the aid of the saliva into a paste which aids the sufferers to obtain relief. Such they declare is effected thereby, however improbable it seems that gums exposed to the contact of such a medicament can be eased by it. However, the swarthy warriors never utter a complaint.

The blacks also maintain that this operation enables them to masticate meat easier, but this explanation is not a plausible one.

There are travelers who deny the truth of these accounts. They are nevertheless true. My brother met tribes thus mutilated not only at Congo, but also at Gabon, among the Pahouins, on the Benin, where all the blacks are cannibals.

The New Anaesthetic "Eucain."

By DR. KIESEL, Berlin, Germany.

Reported by GEORGE RANDORF, Berlin.

The chlorhydrate of eucain, which replaces the chlorhydrate of cocaine, possesses the following composition: G_{19} H_{27} NO_4 HGl. Regarded from a chemical point of view, eucain has this advantage over cocaine, that it does not decompose when boiled with water, while the latter substance decomposes, thereby losing its power as an anaesthetic. Eucain is employed for injections. At first, I used a solution of one-fifteenth of sterilized water, which I injected according to the sphere of operations, and the results were very satisfactory. Regarding the advantages of eucain over cocaine, I would report that:

Firstly—The heart is not affected by it in the least. I have remarked in very excitable patients that the pulse at one hundred and twenty to

one hundred and thirty before the operation, after the injection, immediately resumed its normal condition and became perfectly regular.

Secondly—The anaesthetic is more extensive in its effects both as regards duration and surface influenced by it. In my experiments I have found it at times to penetrate to the muscular tissue. In one case, after an injection, paralysis of the right wing of the nose occurred; the patient declared that his nose appeared to be stuffed up, but that the sense of smell remained unaffected.

Thirdly—One may inject three grains of eucain without injury to the health of the patient with a solution of fifteen per cent.; twelve syringes full may be used to reach the highest dose. But under normal conditions the half of this quantity is sufficient to remove all the teeth of one mouth.

Fourthly—The solutions at one-sixth one-half, prepared with sterilized water, remain always clear and never become discolored, if they are maintained at the same temperature as the room.

Fifthly—Eucain is much less expensive than cocaine. In short, the facility of its mode of employment, the certainty of its success, and the absence of post-operation disorders, render eucain an invaluable anaesthetic. I have substituted eucain in place of cocaine in arsenical paste with the best results. Very seldom have I had complaints of pain after its application.

Dr. Wolff, of Berlin, states in the Oester.-Urg. Viertly f. Zahn, that he had many cases wherein he remarked that after injection of eucain oedema developed, and he finds that these swellings are oftener apparent after eucain than cocaine. A remedy for this should be found. He adds that one of his colleagues, Dr. Herbermann, of Cleve, who has a very large practice, in addressing his patient before operating with eucain, merely says: "I can remove your tooth without causing you pain; your cheek will swell, but you will not suffer." In most cases the patients agree to its use. Dr. Schrimer is entirely opposed to the use of anaesthetics in dentistry. He declares that eucain brings so many evils consequent on its use that it should be carefully avoided. Spielvogel, of Landsberg, is also of this opinion. Reis, of Metz, is not in favor of eucain. He found its use invariably followed by intoxication, which lasted twenty to twenty-five minutes.

Dr. Wolff has used eucain in five hundred cases of extraction. Perfect anaesthesia was the result, and the relatives of the patients, who are the most critical judges in such cases, were, as a rule, satisfied with results. "In my five hundred cases there was not a single case wherein intoxication followed."

Dr. Witzel, of Marburg, used eucain in twenty cases, three of which were followed by dangerous collapse. In one case he had thought, for a time, life extinct. The patient revived in perfect health. After injection of one-fourth syringe, he became suddenly pale, deathlike, and lost consciousness. Schroeder, of Cassel, found that intoxication invariably followed upon an injection of one-half to three-quarters of a Travatz Spray, but he had no case of oedema.

Dental Rubber.

The properties and general characteristics of this important article of consumption in the dental laboratory are but little understood by the ordinary user, nor do many appreciate how difficult a matter it is for the manufacturer to procure and maintain an absolute standard of excellence. It may, in fact, be safely stated that it is simply a physical impossibility for any manufacturer to guarantee an absolutely uniform grade, as no human judgment can determine exactly what the natural constituents of the commercial article he purchases may be. Experience, and the ripe judgment resulting, are very valuable aids towards the selecting of the best grade of the crude article, but under the most favorable conditions, the ablest expert may be deceived.

India rubber is the dried, coagulated, milky juice of various trees and shrubs which grow in tropical countries.

It was first noticed or recorded about five hundred years ago, being reported by one of the companions of Columbus, on his second voyage, who saw the natives of Hayti playing ball with the gum of a tree, which is to-day known as India rubber. The countries of South America are the principal sources of supply for the crude rubber, Madeira, Bolivia, Manaos and the islands of the South American coast furnishing the commercial product, which is gathered by the natives from the rubber trees. The South American rubber is known in the trade under the various names of Para, Ciara, Pernambuco, Maranhao, Cartagena, Guayaquil, etc., of which the first named, Para, stands at the head in quality. Central America, Africa and Asia furnish some of the gum of commerce, but it is generally regarded of inferior quality. Hence the claim of rubber manufacturers to their patrons, that their goods are made from the best Para gum, as a guarantee of superiority. But it must not be forgotten that the Para gums may vary materially. In general appearance, what is offered for sale is all quite similar.

The age of the tree from which the juice is obtained and the district in which the tree is grown determine its quality, which must vary greatly

when made up into dental rubber, dental dam, or whatever particular form it may be converted into for the use of the consumer. Long experience in the handling of the crude material as offered in the rubber markets can of course aid greatly in determination of its value for specific purpose, but, as before stated, no human judgment can be infallible, and hence the dentist must not be disappointed if he occasionally receives a piece of dam which is not exactly up to his ideal standard of excellence, or a piece of rubber which fails to vulcanize just as it should. He must remember that the manufacturer cannot analyze his raw material, and reduce it to a definite chemical quantity as can the assayer of gold. There exists in the gum he uses, and he must take largely on faith, the constituents of matter which he cannot change or control; hence a certain amount of chance in results, and the consumer should be accordingly charitable in his reflections, if perchance he obtains a piece that does not prove quite as satisfactory as one he has tested or used before.

All makers honestly try to use the best, but their judgment alone can govern them in selection.

The question of vulcanization of rubber is of extreme importance in determining quality of a dental plate, as no doubt every dentist has experienced, and many times have the unsatisfactory results been due to the operator's lack of care and observation of well known rules, and no attempt to make a dental plate should be made without knowledge of how the work should be done to obtain satisfactory results. There is unfortunately not sufficient attention given to the importance of the question of vulcanization in our dental colleges, and as a result, many students leave their Alma Mater without a thorough understanding of the subject, and correspondingly unsatisfactory experiences result in their laboratory efforts.—*Exchange.*

In Memoriam.

Luman C. Ingersoll, D.D.S.

Dr. Luman C. Ingersoll died at his residence, No. 710 North Seventh Street, Keokuk, Iowa, May 24th, 1897, aged 73.

Deceased was a native of New York. He came to Keokuk in 1858, and had resided there continuously ever since. Dr. Ingersoll was twice married; his first wife, who was Miss Maria Porter, died in 1888. His second wife was Miss Minnie Banks, to whom he was married in Keokuk in 1890. Up to a very few years ago, Dr. Ingersoll was very active in the practice of his profession—Dentistry, in which he took high rank, and was easily among the leading practitioners of the West.

During the active years of his life Dr. Ingersoll was a leader in his profession. He was a member of the State Dental Society, of which he was President for three years, and for nearly ten years he was Dean of the Faculty of the Dental Department of the Iowa State University. During a quarter of a century he was connected with college professorships, and was a member of the Faculty of the Keokuk Medical College from the time the institution was organized. His literary attainments served him well in the preparation and completion of an extensive work on dentistry. Dr. Ingersoll was a man of high scholarly attainments, broad intellectuality and thorough education. He was a man of a kind and gentle disposition, big hearted, good natured, generous and helpful; a member for many years of the Congregational Church, and a man whose death is mourned by all who knew him.

Funeral services, conducted by Rev. W. L. Byers, were held at the family residence. The pall-bearers were Dr. Walton Bancroft, J. A. M. Collins, Sylvester Carter, J. C. Daniels, Frank H. Jones and William Rees.

The following resolutions were passed by the members of the profession in Keokuk:

Whereas: The All Wise Ruler of the Universe has, in his infinite wisdom, removed from our midst our highly esteemed fellow laborer, Luman C. Ingersoll; and

Whereas: The intimate relation held by him during a long and useful life with the dentists of Keokuk, Ia., makes it fitting that we record our appreciation of him; therefore

Resolved: That the wisdom, fidelity and ability which he has exercised in science, literature, art, research and council to aid in establishing

and advancing the profession of his choice, will always be held in grateful remembrance.

Resolved: That the removal of such a man from among us, where he has held a leading position for more than forty years, leaves a vacancy that will be deeply realized by all.

Resolved: That we extend to his bereaved family and relatives our earnest sympathy, and mourn with them in this sad affliction.

B. C. HINKLEY,
J. M. STARK,
D. M. MILLS,
Committee.

E. A. Holbrook, D.D.S.

Dr. E. A. Holbrook, the father of Dr. Arthur Holbrook, of Milwaukee, and an old and highly respected citizen of Watertown, N. Y., who died April 21, 1897, at the age of eighty-nine years, was born at Madrid, St. Lawrence County, Oct. 9, 1817. His father died when he was fifteen years of age, leaving a family, consisting of a wife and twelve children, in straitened circumstances, their needs absorbing a portion of the young man's first earnings.

He managed to obtain an academic education at the St. Lawrence Academy and Clinton Liberal Institute, and studied medicine for two years, relinquishing its practice, however, because of a constitution broken down by the epidemic of 1843. In 1839 he married Miss Lucinda Richardson, of Madrid, who died in 1842. During this period he learned the art of dentistry. For seven seasons he taught school, and in 1844 he commenced preaching the faith of Universalism in fellowship with that denomination. He continued preaching for thirteen years, the first seven years thus occupied being spent in Malone. In 1857 he relinquished his letter of fellowship, and attended more closely to the practice of the dental profession, to which he devoted more than fifty years.

In 1846 Dr. Holbrook was married to Miss Anna Melissa Hazelton, of Fowler, St. Lawrence County, who survives him. He leaves four children: Dr. Arthur Holbrook, of Milwaukee; Charles E. and William Holbrook, of Watertown; and D. M. Holbrook, of New York; twelve grandchildren and one great-grandchild. He is also survived by two brothers, L. D. Holbrook, of Watson, Cal., and Charles T. Holbrook, of Santa Cruz, Cal., and two sisters, Mrs. M. M. Cutting, of Hudson, Mass., and Mrs. McAllister, of Green Bay, Wis.

Dr. Holbrook settled in Watertown in 1853, and continued to reside there until the day of his death. He devoted a great deal of time to lecturing on various subjects, and has contributed many excellent articles to different journals, the questions of capital and labor, the canals, railways and kindred subjects occupying his attention and forming the subjects of his deep study. He has written a great deal of poetry, his volume, "Life Thoughts," published in 1875, meeting a ready sale. He also published in 1882, a book entitled "The Light of Prophecy," and in 1888 a small volume entitled "The Soul; or, Life's Problem." Dr. Holbrook's last important published work was the third edition of a poem entitled "The Light of the Future, or the Evolution of Religion."

In accordance with a written request left by Dr. Holbrook, his remains were taken to Buffalo and cremated, the ashes being interred in the family burial plot in Brookside Cemetery, at Watertown.

Frank Abbott, M.D.

At a special meeting of the Alumni Association of the New York College of Dentistry, held April 29th, 1897, the following preamble and resolutions were adopted:

Whereas, in the wisdom of an all-wise Providence, the Alumni Association of the New York College of Dentistry is called upon to mourn the loss by death of our late Professor and Dean, Frank Abbott, M. D., be it

Resolved, that the death of our late professor and friend calls for expression of esteem for one whose character was above reproach, whose undeviating justice and loving kindness to all with whom he came in contact leave impressions that cannot be effaced, and whose influence for good, both in and out of his chosen profession was immeasurable.

One of the brightest lights of our profession has been snuffed out, but its rays, pure and strong, cannot be extinguished while dentistry lasts.

Resolved, that this preamble and resolutions be placed in full upon the minutes, and that a copy suitably engrossed be presented to the bereaved family, for whom we feel the sincerest sympathy.

The Committee:

W. J. TENISON.

B. C. NASH.

M. C. GOTTSHALDT.

American Dental Association.

The thirty-ninth annual session of the American Dental Association will be held at Old Point Comfort, Va., commencing at 10 A. M., on Tuesday, August 3rd, 1897.

GEORGE H. CUSHING, Recording Secretary.
Chicago, Ill.

Southern Dental Association.

The 28th annual meeting of the Southern Dental Association will be held at Old Point Comfort, Va., August 3rd to 6th inclusive. Headquarters at Hygeia Hotel.

An excellent programme is in course of preparation.

Members are urgently requested to be present. This will be one of the most important meetings of the Southern, and it is hoped that every member of the Association will be present, as the question of the consolidation with the American will be settled at this time.

S. W. FOSTER, Recording Secretary,
Atlanta, Ga.

The National Association of Dental Faculties.

The National Association of Dental Faculties will meet at Hygeia Hotel, Old Point Comfort, Va., Friday, July 30, 1897, at 10 A. M.

The Executive Committee will meet at 9 A. M. Thursday, July 29; persons having business with this committee will please present their papers at the first session.

By order of
JONATHAN TAFT, Chairman Exec. Com.
B. HOLLY SMITH, Sec'y.
Baltimore, Md.

Southern Dental Association.

The Committee on Cataphoresis of the Southern Dental Association, which will have charge of the clinics upon that subject, desires, if possible, to have for patients attending dentists.

With that end in view, we would now request any members or visitors who require any work done in the following line to report to us *at once* by postal or letter, that arrangements may be made.

The work to be done by these operators will include curing chronic abscesses, bleaching teeth, preparing and filling sensitive cavities.

It is especially desirable that the work be done for dentists, for in that case it can be seen from year to year, and the result noted, whereas, if done for strangers, no further study of the cases and their results can be obtained.

The following well known operators have positively promised to clinic for us:

Dr. C. L. Alexander.
Dr. T. M. Allen.
Dr. J. W. David.
Dr. M. W. Hollingsworth.
Dr. S. E. Gilbert.
Dr. R. G. Griffis.
Dr. C. A. Meeker.
Dr. H. C. McBriar.
Dr. Geo. H. Wells.
Dr. J. M. Fogg.

Dr. E. S. Chisholm has promised to do so, if he can possibly arrange to attend the meeting.

The apparatus of the following makes will be used:

Chloride of Silver Dry Battery Co.
A. P. Cary & Co.
Electro-Therapeutic Co.
M. L. Franklin.
F. T. Van Woert.
S. S. White Co.

It will be seen from the above programme that a very interesting set of clinics is assured.

Attention to the above request will be appreciated by

Yours very truly,
C. EDMUND KELLS, Jr.,
Chairman.

New Orleans, June 16, 1897.

The National Association of Dental Examiners.

The fourteenth annual session will be held at Old Point Comfort, Va., commencing Friday morning, July 30th, at 10 A. M., and continuing in session Saturday, July 31st, and Monday, Aug. 2d. The sessions will be held in the Hotel Chamberlin.

The Hotels "Hygeia" and "Chamberlin" will give rates of $2.50 per day, two in a room; $3.50 per day, one in a room.

Fares on all the Trunk Lines, one full fare and one-third, good for the sessions of the American and Southern Dental Associations.

The Old Dominion S. S. Co., Pier No. 26, North River, will sell excursion tickets, including meals and berths, $11.20, sailing every day, 3 P. M., from Thursday, July 29th, using the name of the Secretary.

Let every State send its delegates!

CHARLES A. MEEKER, D. D. S., Sec'ty.
29 Fulton street,
Newark, N. J.

New Jersey State Dental Society.

The twenty-seventh annual meeting will be held in the Grand Atlantic Hotel, Atlantic City, commencing on Wednesday morning, July 21st, and continue in session two days. Seventeen papers by eminent men will be read upon interesting topics to the profession. Clinics of every description have been provided; four large rooms on the ground floor available for exhibits, with 110 volt current for electrical exhibits.

Hotel rates, $2.50 per day up. Accommodations for 700 guests.

Friends from the West and East contemplating attending the A. D. A. will be able to attend this meeting and take the Old Dominion Line of steamers from N. Y. Thursday, July 29th, 3 P. M., at an excursion rate of $11.20, or the Penn. R. R., rate of one and one-third fare.

CHARLES A. MEEKER, D. D. S., Sec'ty.
Newark, N. J.

Resolutions Adopted by the American Academy of Dental Science.

The Academy, viewing with dismay the character of the advertisements appearing in some of the self-styled dental journals, whereby secret preparations, often of a highly dangerous character, are paraded in such company and guise as to deceive those not accustomed to scrutinize closely all medicines thus offered, and, more particularly, of advertisements

soliciting dentists to advertise, announcing that "Professional dignity and good advertising will work well together," giving the name and address of the professional "Writer of Dentists' Advertisements," and the unscrupulous acceptance of the above-mentioned journals of advertisements, the character of which is detrimental in the highest degree to the advancement of our profession, the best element of which is striving with self-sacrificing and untiring labor to make it worthy the name and title of a liberal and learned profession, therefore,

Resolved: That the Fellows of the American Academy of Dental Science strongly condemn such advertising, believing that it is degrading and injurious to the good name of the honorable calling they represent; and they further declare that the editors of such journals, allowing the common tricks of trade to dominate that which should be governed by professional dignity, are unworthy to be acknowledged as teachers and respected confreres among dentists.

Resolved: That this resolution be forwarded to the editors of the leading dental journals, as expressing the sentiment of the Academy.

Resolutions Adopted by the Connecticut State Dental Association.

The Connecticut State Dental Association, viewing with deep regret the prevailing tendency on the part of several so-called dental journals to print advertisements of Anaesthetic Nostrums and particularly the advertisements of "Writers of Dentists' Advertisements,"

Resolved: That this Association strongly condemns such conduct on the part of the editors of these magazines.

Resolved: That it would be well for the Dental Associations of this country to take such united action as would effectually stamp out this new phase of dental journalism.

The Eighth District Dental Society of the State of New York.

The Eighth District Dental Society of the State of New York, at the twenty-ninth annual meeting, held in Buffalo on the 27th and 28th of April, elected the following officers for the ensuing year:

President, S. Eschelman; Vice-President, Louis Meisburger, Recording Secretary, W. E. Marshall; Corresponding Secretary, D. F. Bentley; Treasurer, C. W. Stainton; Librarian, S. A. Freeman.

W. E. MARSHALL, Recording Secretary,
Buffalo, N. Y.

California State Board of Dental Examiners.

The California State Board of Dental Examiners consists of the following members:

F. W. Bliss, President, Santa Cruz.
F. F. Tebbets, Sacramento.
F. H. Metcalf, Sacramento.
Thos. Morffew, San Francisco.
G. S. Backman, San Francisco.
G. J. Drucker, San Francisco.
W. A. Moore, Secretary, Benicia.

And the annual meeting for the examination of candidates for certificates to practice commences first Tuesday in August, continuing four days.

W. A. MOORE,
Benicia, Cal.

Washington State Dental Society.

The tenth annual meeting of the Washington State Dental Society was held at the Hotel Butler, Seattle, May 17th, 18th and 19th, and the following officers were elected:

R. B. Gentle, President, Seattle.
H. S. Hedges, 1st Vice-President, Tacoma.
J. N. Prather, 2d Vice-President, Seattle.
C. L. Erwin, Secretary, Seattle.
J. W. Cloes, Treasurer, Tacoma.

R. B. GENTLE, Pres.,
Seattle, Wash.